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LAKE CARRIERS' ASSOCIATION.

To consider and take action upon all general questions relating to the navigation and carrying business of the Great Lakes, maintain necessary shipping offices and in general to protect the common interests of Lake Carriers, and improve the character of the service rendered to the public.

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NAVAL REPAIR SHIP.

The repair ship Vulcan is one of the naval successes of the existing war. That so wholly novel an adjunct to a modern fleet should prove her worth at once and so signally in the intricate science of naval conflict is strong evidence not only of the need which she has filled but of the vigilance and foresight of the engineer-in-chief of the navy, with whom her design originated and under whose direction her plant has been installed.

In preparing for this exigency the navy on the outset of the war purchased the steamship Chatham, renamed her the Vulcan and fitted her out with much expedition at the Boston navy-yard. It may be noted here that the Vulcan is not the first repair ship which the engineer-in-chief has projected. That the Vulcan has fulfilled the promise of her originator is shown by the fact that for further service our ships are not coming home except to be docked. The great fleet of Sampson lies in the landlocked Cuban harbor, with the Vulcan close at hand, prepared in every essential way for the duty which the Navy Department may prescribe, and this after many of the vessels have been months away from a Northern machine shop and nearly a year from a dock-yard.

The character of the work now being done by the repair ship is shown to some extent in a letter from one of her officers who, writing from Guantanamo bay, says in regard to this vessel and its utility: "I can only say that we are busy night and day. Our brass furnace is going every day, there having been unexpected calls for brass castings of all kinds and sizes. It seemed that every vessel in the fleet—colliers, transports, supply and warships—has either a winch, a blower engine or a dynamo broken down. New strips and rods galore are required, with new brasses, gun castings,

etc. We have supplied also an enormous quantity of stores to the different ships. As I said before we are busy all the time and there is no vessel in the fleet but has had something done to it. The torpedo-boats, small yachts and tugs required the most work.

"It will be seen from this how fully the Vulcan fills one of the most imperative needs of modern war, the maintenance of the 'fleet in being' so that its massive warriors shall be as Torrington said long ago, 'Fit to lie in a line,' to be battleships as well after long service as before. The problem of the repair ship is one of many which the Navy Department has had to solve in the exigencies of war after a generation of peace. The department and the nation are to be congratulated that in meeting these conditions they can command the services of such men as the present engineer-in-chief of the navy."

ment it appears that the number of vessels was 24,664 with a tonnage of 11,815,376, in 1898, as compared with 23,640 vessels, with a tonnage of 11,473,421 in the previous year, the increase in the number of vessels thus being 1024, and tonnage 341,955. A note occurs in the report to this effect: "The tonnage shown above represents the total net register tonnage of vessels paying rates to the board, inwards or outwards, as the case may be. To arrive at the total tonnage which entered, and the total tonnage which left the Mersey, it is necessary to double the figures. The approximate total tonnage, inwards and outwards, would therefore be 23,630,752 tons for the year just ended." The entire amount paid in the shape of dock tonnage, rates, harbor rates, dock rates on goods, and town dues on goods in 1898 was £1,114,188, 18s. 7d.; while in the preceding year the sum obtained from those sources was £1,108,097 3s. 5d., this representing an increase of £6,091 15s. 2d.

THE ST. LAWRENCE CANALS.

The Deputy Minister of Railways and Canals of Canada, who recently inspected the construction work upon the St. Lawrence canals, reports that operations are progressing rapidly. The contractors for the deepening of the channel below Prescott are taking over 500 cubic yards of earth and 500 yards of rock per day, and the output will shortly be doubled. At the increased rate of progress the channel will be ready for 14 feet navigation next spring. On the contract for the Cardinal section of the Galops canal, 8,000 cubic yards of earth are being taken out each day. On the Larkin & Sangster contract the rock and earth work are advancing towards completion. The masonry work on the lock is in progress and a large quantity of cut stone has been deposited on the ground. The work of the Canadian Construction Co., at Farran's Point is being energetically pushed forward. Two steam shovels and three dredges are constantly in operation, and the equipment will be increased by two more dredges in a few days. The masonry is well under way and cut stone is arriving from the quarries daily. Everything possible is being done to expedite the construction work on the Soulanges canal.

EARLY SAILING.

On the 7th of August, 1679, was launched the first vessel that ever floated upon Lake Erie. She was sixty tons burden and called the Griffin. She was built by Robert Cavalier Sieur De La Salle. De La Salle encountered great difficulty in constructing the Griffin, as the tribe of Indians known as the Senecas thought she was some horrible monster, built for the purpose of destroying them, and would therefore not sell corn to the men employed upon her. They also threatened to fire her on the stocks. A constant guard was necessary for her protection.

She was supposed to be built at the mouth of Cayuga Creek, six miles above Niagara Falls, and those engaged had great difficulty in getting her through the rapids into the lake. As great fears were apprehended by the pilot who had her in charge, she carried seven small mounted guns. Her first voyage with thirty-two passengers on board was to Green Bay, which was accomplished in twenty days. She was, we believe, lost on her return trip. There have been many changes in shipping in the past 196 years.

LIVERPOOL TONNAGE CHARGES.

Dock and port charges at ocean ports amount to very large sums each year as the following report would indicate:

Mr. T. H. Townshend, the principal accountant of the Mersey Docks and Harbor Board, Liverpool has issued a comparative statement showing the number and tonnage of vessels which have paid rates to the board, together with the amount of rates and dues received on ships and goods for the two years ending July 1st, 1898. From this state-

CANAL TO THE COAST.

Mr. Alfred Noble, a member of the Deep Waterways Commission which is investigating the question of a ship canal from the Great Lakes to the ocean, gave to a reporter this week the following account of progress made on the surveys: "The surveys from Lake Erie to Lake Ontario are now completed. Two routes for the outlet from Lake Ontario are now being surveyed under Assistant Engineers A. J. Himes and D. J. Howell. The Oswego route, from Oswego to the mouth of the Mohawk river at Troy, is surveyed to the extent of 130 miles out of a total distance of 177 miles. The surveys will be completed this fall. The other outlet being considered is by way of the St. Lawrence river to lake St. Francis, thence across country to King's Bay, near the foot of Lake Champlain, along Lake Champlain to its head at Whitehall, thence across the divide to the Hudson at Fort Edward, and down the Hudson to deep water. Assistant Engineer Charles L. Harrison has just completed surveys of about 40 miles from Troy to Fort Edward, on this line, and the surveys will be extended to deep water in Lake Champlain this season. F. P. Davis has just begun surveys between King's Bay and Lake St. Francis and J. W. Beardsley is investigating the shoal portion of the St. Lawrence river between Lake Ontario and Lake St. Francis. These surveys will probably not be finished this year. H. F. Dose is working with a small party along the Hudson river below Troy. The channel will require deepening for about thirty-five miles." The two other members of the commission are Maj. C. W. Raymond, of the Corps of Engineers, U. S. A., and George W. Wisner, of Detroit.

TO ABATE A NUISANCE.

The announced determination of the government steamboat inspectors along the lakes to enforce the law against the carrying of passengers on boats which have no passenger license has disclosed the fact that many captains are very much dissatisfied with the state of affairs which hitherto existed. On boats without a license, and even on those which have a license, it is by no means uncommon for the captain to be compelled to give up his cabin for the accommodation of some friend of the owner. This is against the law, but the captain dares not object very strongly for fear of losing his position. A man who sometimes has to be up 30 or 40 hours at a stretch may be excused for feeling a little annoyed at being unable to secure any comfort when he gets a chance to rest. Several lake captains have complained bitterly about these things to the inspectors. "We can kick all we like, but it will do no good," says a captain. "If an owner is fined \$500 he may have no difficulty in getting it remitted or reduced to a nominal sum." The inspectors now declare that when an owner is fined in the future, he will have to pay it, and they are confident that one or two examples will be sufficient to abate the so-called nuisance.

THE MARINE RECORD.

NEWS AROUND THE LAKES.

CHICAGO.

Special Correspondence to The Marine Record.

Grain freights are steady this week on the basis of 1½ cents on corn to Buffalo.

Charters were made here last Saturday for 450,000 bushels of corn. The shipments of corn during last week aggregated 2,000,000 bushels.

The steamer Phoenix unloaded a cargo of 2,199 tons of bituminous coal at the O. S. Richardson Fueling Co.'s north pier dock on Monday.

The new steel whaleback steamer Alexander McDougall made her first appearance at this port on Monday with a large cargo of coal from Lorain, O.

The wreck of the steamer Geo. W. Morley, which burned off Evanston, is to be sold Sept. 1st to the highest bidder. See advertisement on another page.

The Chicago floating dry dock had the steam yacht Ollie in for some repairs, the tug Prodigy for repairs to shoe, the tug Van Schaick for bottom calking.

The steamer J. L. Hurd arrived Saturday from Providence Bay with a very large cargo and deck load soaring away up above the rail, comprising 11,000 cedar posts and 9,000 cedar ties.

James B. Bates, shipbuilder, recently returned from a visit to Halifax, Nova Scotia, his birthplace, which he had not visited for 24 years. He found many changes and departures. He also visited St. John's, New Brunswick, Boston and Niagara Falls, and enjoyed his trip immensely.

J. J. Rardon & Co. chartered the barge Moravia and steamers J. F. Eddy and City of London for corn to Erie at 1½ cents, steamer Rosedale for corn to Prescott at 1½ cents, steamers H. Chisholm, Hesper and Phoenix for corn to Buffalo at 1½ cents, steamer Kragon for flax seed to Cleveland at 1¼ cents.

At J. B. Bates & Co.'s shipyard the steamer Viking received considerable repairs to her cabin, the steamer Nyanza some calking, the schooner Elgin some repairs, the schooner Lotus a new center board, the schooner Iron City four new timber heads, the steamer Geo. F. Williams some repairs, the steamer City of Traverse some calking.

A well-worn tow-line was the cause of an accident to the schooner Louise A. Burton which was being towed out light by the tug Wm. Dickinson, Saturday morning. Just opposite the Anchor line office the line parted and the schooner ran her jibboom against the wall of the office and carried it away, and also considerable of the brick work.

The whaleback steamer, Christopher Columbus, will give a clam bake and fish dinner free to their patrons during an excursion to Milwaukee on Saturday, August 20th, in commemoration of "Whaleback Day." 50 barrels of the finest clams, fresh from the ocean, and 2,000 pounds of the very best fish and other viands will be prepared for the occasion.

The side-wheel passenger steamer State of Ohio arrived here Saturday morning from Cleveland and left here a few hours later with a large number of passengers for Mackinaw, the steamer having been chartered by the Lake Michigan & Lake Superior Transportation Co. to take the place of their steamer Manitou, recently disabled by damage to her machinery.

The scheme of lightering freight in Chicago river is attracting more people than ever before. It is announced that a third line will be established within a few days. The promoters of the scheme are reticent as to the boats and equipment of the line, but claim they have been promised the business of the railroad lines, and in addition will run to Waukegan and South Chicago. They say the boats are now being fitted out, and will be brought to this port within a few days. The original line now has its transfer boats lying idle. The second line had for its working force the Lehigh Valley steam lighter and a tug.

The Barry Bros.' Independent Tug Line, Chicago, announce to their many friends and patrons, and all owners of vessel property on the lakes, that there is a reduction of the rate of discount allowed from the established tariff on towing, and as it is subject to change from day to day on its downward course, they do not wish to quote prices, but intend to give them the benefit of the lowest rates on towing at the time of performing the work. The rate of discount at the present time is 50%, but the indications are that it will go still lower, and their suggestion to vessel owners would be to await later developments before closing towing contracts.

The stern paddle-wheel steamer, Uncle Sam, built by Chas. Larson, yacht and boat builder, of Chicago, at Fort Atkinson, Wis., had a very successful trial trip recently at Koshkonong Lake, her speed averaging about 12 miles an hour. Her dimensions are 75 feet over all, 13 feet beam, 16 feet over guards, 3 feet depth of hold, 19 inches draft, with 225 passengers on board. She is equipped with two fore and aft, long stroke engines, and a water-tube boiler of 150 horsepower, built by C. P. Willard & Co., Chicago. She has a full complement of electric lights, and a 3,000 candle-power search light. The resorters at the lake are patronizing the new steamer largely.

The Salvation Army's second annual steamboat excursion took place on the Graham & Morton Transportation Co.'s

steamer, City of Milwaukee, to St. Joseph and Benton Harbor, on Thursday, August 12th, and was very largely attended. During the ride over, at noon, the wedding of two Chicago Salvationists was conducted by Colonel French. The happy couple were Thos. H. Atkinson and Mary A. Nichols. As soon as the marriage ceremony was over Capt. John Stewart, commander of the City of Milwaukee, gallantly stepped forward and kissed the bride. Some of the ladies on board were of the opinion that the gallant captain was quite an adept at such pleasureable performances.

BUFFALO.

Special Correspondence to The Marine Record.

Capt. Martin Johnson qualified this week as master of the schooner Crete and Capt. A. Papinaw as master of the schooner A. C. Keating.

Capt. Henry Murphy, has been sworn in as master of the Montana, having been promoted from the position of mate of the Mohawk. Capt. Murphy was master of the Florida at the time she was sunk in a collision on Lake Huron some years ago.

General lake traffic continues good, and that it is improving is indicated by the fact that nearly all the line boats which have been laid up are again at work. Among the last to go out of ordinary are some of the Western Transit Co.'s vessels, which are now all busy.

Traffic on the Erie canal is getting quite brisk again and there has been a heavy business done in grain through the week. The clearances for one day amounted to nearly half a million bushels of corn besides other freight. Rates held at 2½ cents on wheat and 2½ cents on corn to New York.

Some of the vessel agents have decided not to report their charters in the future. In some instances a vessel is chartered several days before she loads. Meanwhile, the rates are liable to change materially, and the agents think their interests, and the interests of the owners will be best served by not being made public.

The steamer Northern Queen loaded here this week after being laid up for nearly two months. The prospects for a brisk fall trade are looking brighter, and there is every indication that vessels will be enabled to earn fairly good freights before the season closes, but very few have earned anything to speak of up to the present.

The charter price agreed upon between the Lake Michigan and Lake Superior Transportation Company and the Cleveland and Buffalo Navigation Company for the State of Ohio is understood to be somewhere between \$300 and \$400 per day, or about \$10,000 for twenty-seven days remaining of the excursion season. The price is a high one, but it serves to demonstrate the profitability of a first-class excursion route.

Supervising Inspector of steam vessels Capt. M. J. Galvin is making what will probably be his last inspection of the eastern part of his district, on Lake Ontario and the St. Lawrence. Inspector Galvin will visit all the local inspection districts, and make a full and comprehensive report of the condition of all territory which has been under his care. Capt. Galvin will be succeeded in office by Capt. James Stone, of Cleveland.

David Bell, of Bell's Engine Works, this city, the well known vessel builder and the constructor of the first iron freighter on the lakes, was the designer of the wheel used on the Gloucester, Capt. Wainright's little craft, which did such good execution on the Spanish boats at Santiago. The wheel was built about two years ago, when the yacht was in possession of J. Pierpont Morgan, and increased the boat's speed a full mile an hour.

"There is one drawback to the hope of profit in the handling of freight by canal," said an official of the Erie canal this week. "While railroads and lake lines are keeping pace with the demands of the times, and are exerting every effort to cheapen the cost of transportation, the canal men plod along in the same old channel. If one steam canal boat can tow several barges, why not have all steam boats? We are sufficiently advanced to have taken horses from the canal entirely. The common carrier that can transport grain the cheaper, is the one that is going to have the business. Railroads are consolidating their lines and removing many high salaried officials, and in a hundred ways reducing the expenses of carrying freight. As a result they can transport grain at a much less rate than formerly and still retain their profit."

DETROIT.

Special Correspondence to The Marine Record.

Capt. Allen McIntyre, master of the steamer Manitou, will sail the steamer State of Ohio on the Chicago-Mackinaw route.

The tugs Blazier and Onaping, which have been working between Georgian Bay and Bay City this season, have returned to this port.

The boats belonging to the U. S. S. Yantic, now the Naval Reserve drill ship here, which were left at Ogdensburg last fall, were shipped here this week on the steamer H. R. James.

W. W. Huntington, representative at the Wheeler yard of the Bessemer Steamship Company, claims he never said the company would take the yard and build a lot of large vessels for the line.

By authority of the Treasury Department the Detroit & Cleveland Navigation Co. now composes part of the bonded route of the Baltimore & Ohio Railroad Co. for the transportation of unappraised merchandise.

Assistant Secretary of the Treasury Spaulding has reduced from \$50 to \$5 the fine imposed on the tug Pauline Hickler, of Detroit, for failure to surrender license. It was shown that there was no intention to violate the law.

William Barnes, who left Detroit recently to take a position on the steamer State of New York, between Cleveland and Toledo, is missing. Barnes is well known here and worked for a considerable period on the D. & C. steamers.

Abram Smith & Son have just completed re-modeling and repairing the steamer Roberta owned by the Detroit and River St. Clair R. R. Co. The Roberta will be placed on the route between Marine City and Port Huron in connection with the railroad.

The launches at the Wheeler and Davidson yards, at West Bay City, Saturday, both passed off smoothly. The Bessemer steel schooner John A. Roebling was launched at noon, and the Chickamauga slid into the water at 4 o'clock. Large crowds witnessed both launches.

It is again reported that a rate of 30 cents has been established on soft coal from Lake Erie ports to Milwaukee. The boats are not named, but one Cleveland broker states positively that he received 30 cents on a tow from Sandusky, and the same figure on a tow from Cleveland.

The Ed. Smith No. 2 is in dry dock being repaired after colliding with the Aurania; Capt. C. E. Benham, representing the owner, Mitchell & Co., and Capt. Tuttle for the underwriters, held the survey. The cost of repairs is likely to run up to fifteen or twenty thousand dollars.

The large steel steamer Troy recently launched from the Wyandotte yards of the Detroit Dry Dock Co., will be ready for work in about three weeks. She is considered one of the best built and equipped boats ever put afloat on the lakes, although Detroit always turns out the highest class of tonnage.

The funeral of the late Capt. Shanks was held from his residence in Windsor, Sunday afternoon. Services were held at the grave in St. John's cemetery, Sandwich. The following gentlemen acted as pallbearers: R. F. Southerland, George Laird, E. G. Swift, Irving Taylor, W. Crowe and F. Joyce.

Postmaster Dickerson says that the mail boat will handle more than 500,000 pieces this season. In time he will ask for a new and larger steamer to accommodate the entire river postoffice. This will enable him to dispense with an office on shore. Such a boat will cost about \$15,000. Congressman Corliss, he says, never opposed the Detroit river service, as has been charged, but was opposed to an expensive mail steamer at a time when the service did not warrant the expenditure.

As one result of the temporary collapse of the Lumber Carriers' Association a differential of 12½ cents is now being granted to Detroit as compared with Toledo and other Lake Erie ports. While the association lived this differential was steadily refused, but when individual carriers began competing against each other they found the pressure too strong. With a revival of trade it is hoped that the organization can be placed on a firmer basis than ever, and that all members will abide by and live strictly up to the rules.

The Steamer T. W. Snook, which has been engaged in the vicinity of Manistique for some time, recovering the cargo of pig iron from the sunken schooner Kate Winslow, has completed her work. Nearly the entire cargo, 1,200 tons, was recovered. The wreck lies in water 70 feet deep and six divers were employed. These divers worked in pairs and were paid \$2 per ton for all ore recovered. One of them named Nelson is credited with having placed 730 pigs in the sling in a single day. The recovered cargo was brought to this port.

The following figures supplied by the collector of customs shows the number of cars ferried across the Detroit river, between Detroit and Windsor, during the 12 months from July, 1897, to June 31, 1898. Day and night, winter and summer, the big transfer boats of the railroad companies speed back and forth laden with freight and passenger cars, picking their way among the throng of vessels and yet they keep as near schedule time, almost, as the trains that speed from Detroit east and west. The number of cars handled were as follows:

	East.	West.
July.....	18,504	17,536
August	21,783	18,548
September.....	16,087	23,151
October....	12,422	13,087
November.....	13,412	12,806
December.....	20,417	10,860
1898.		
January.....	25,688	27,273
February.....	23,792	21,296
March.....	31,419	31,373
April.....	25,524	23,575
May.....	25,731	24,721
June.....	22,448	21,822
Total.....	257,229	246,048

The Michigan & Ohio Car Ferry Co., has filed a complaint before the Inter-state Commerce Commission against the Michigan Central Ry., in which it alleges that it is a common carrier engaged in the transportation of railway cars and their contents between Sandusky, O., and Detroit, Mich., that at Sandusky it connects with the Baltimore & Ohio Ry. and, under contract with that company forms part of a through line between Detroit and all points in Ohio, Pennsylvania, Indiana and other states reached by the Baltimore & Ohio

Ry., and its connections; that it receives from the Baltimore & Ohio at Sandusky inter-state traffic for transportation to Detroit, there to be delivered to consignees or to the Grand Trunk Ry. system or other railways for further carriage to destination points beyond Detroit; that freight traffic from Baltimore & Ohio points to Detroit, part of which is now transported by the complaining Ferry Co., is also forwarded via Toledo over the Lake Shore & Michigan Southern Ry., and other lines, including the Michigan Central Ry. from Toledo; that the established switching charge made by the Michigan Central for delivery to industries and private sidings on its line in and around Detroit is \$2 a car, with free return of empty car to the connecting company from which the loaded car had been received, and that this would be the switching charge exacted by the Michigan Central on a carload of freight originating at a point on the Baltimore & Ohio Ry., and consigned to an industry on the defendant carrier's line in Detroit, provided such carload was forwarded all rail; that defendant also performs such switching service for local industries or manufacturers in the city of Detroit at the same charge of \$2 a car; that the defendant carrier has refused to accept from the complainant the established switching charge of \$2 a car for switching cars containing inter-state traffic transported by the complainant and turned over to it for delivery to industries on its line, and has demanded and exacted from complainant \$5 a car for this service; that in making such discrimination the defendant, the Michigan Central Ry., directly violates the provisions of sections 1, 2 and 3 of the Act to Regulate Commerce.

CLEVELAND.

Special Correspondence to The Marine Record.

Last week's rate of 30 cents on soft coal to Milwaukee does not seem so secure as it was a couple of days ago. A little weakness has been caused by a falling off in the demand for hard coal tonnage at Buffalo.

The body of Capt. Peter Lavoo, of the schooner Warmington, who was reported missing, was found in the river at Toledo on Monday. There were no signs of violence, and foul play is not thought to be the cause of his death. Capt. Lavoo lived in Huron.

The general cargo steamer Huron, built by the Cleveland Ship Building Co., at their Lorain yards, to the order of R. R. Rhodes and others, will be launched this afternoon, and it is safe to say that Superintendent Bristow will make a success of it as usual. The Lorain yard is considered one of the best shipbuilding plants in the country, both in location and equipment.

The Empire State and the Badger State are receiving an excellent patronage, and are becoming very favorably known between Detroit and Lake Ontario ports. The trip to the Thousand Islands is one of the most enjoyable on the whole lake system, and the passenger rates are very moderate. Messrs. Farasey & Marron, general agents of the line, give their passengers every consideration.

The big order for naval vessels which the Cramps secured from the Russian government has hastened extensive improvements to the shipbuilding plant of that firm, which have been in contemplation for some time. Contracts are being let for a system of overhead cranes, the Brown system of hoisting and conveying machinery, manufactured at the company's works in Cleveland, and for numerous new tools.

The contractors engaged in cutting the bow off the revenue cutter Onondago, in order that she might pass through the St. Lawrence canals on her way to the coast, to become a gunboat, received notice to stop the work, as the vessel will not be needed by the navy, owing to the ending of the war. It is not known whether the Gresham and the Algonquin will be sent back or not, but, owing to the expense of getting them through the St. Lawrence system of canals it is likely that they will be kept on the coast.

The steamer J. H. Outhwaite, which was badly damaged by going ashore at Presque Isle, has been thoroughly rebuilt at the Davidson shipyard, West Bay City. Particular interest has been evinced in regard to the work because the owners of the boat recently instituted a suit to recover the insurance, as they claim she was a constructive total loss. The underwriters, on the other hand, contend that she is in better condition than prior to the accident. The case will no doubt be fought out in the courts and will be watched with interest by vesselmen generally, unless some sort of compromise is effected between the owners and underwriters.

James S. Dunham, president of the Lake Carriers' Association, paid Cleveland a visit this week. "Lake Ontario vesselmen," said Capt. Dunham, "are trying to have the Welland canal tolls taken off, and they think this is a good time for bringing up the subject. The commission which meets at Quebec shortly to settle differences between the United States and Canada, will be asked to consider the matter. The Lake Carriers' Association will recommend that these tolls be abolished, but I suppose that is all we can do. The present tolls are two cents a ton on vessels, ten cents on grain, and twenty cents on coal."

Hugo Eimo began suit against Pickands, Mather & Co. last week in the district court at Duluth, to recover \$15,450 damages for injuries he claims to have sustained last fall. He alleges in his complaint that he was working on one of the company's barges as a seaman last October, and that while in the discharge of his duty, he fell down a hatchway into the hold of the vessel, the hatchway having been carelessly left open without the usual guard around it. The accident, it is alleged, took place while the barge was at Ashland, Wis. Eimo claims that he was permanently in-

jured around the legs and feet. He alleges that he incurred injuries to the amount of \$15,000, and that the expenses caused by the injuries amount to \$450.

One of the improvements which river men have long been desiring on sanitary and other grounds, the opening of a channel into the lake at the west end of the old river bed, seems likely to be carried out in the course of a short time. The contract for the dredging was let some time ago, but the actual work could not be begun until the Lake Shore Railway had constructed its new bridge over the site of the proposed new channel. This bridge is now in process of erection. It has been delayed hitherto by certain engineering difficulties incident to the character of the structure, which is to be a single span at least 20 feet above the surface of the water, which will flow under it when the dredging is completed. In accordance with the agreement made between the Lake Shore Railway Co. and the city, it will be a stationary bridge. The length over all will be 187 feet. Workmen are now engaged in erecting abutments, which will stand each about fifty feet from the edge of the proposed new channel. The channel, which is to be dug from the river to the lake, will be 1,200 feet long, 60 feet wide, and 18 feet deep. It is not intended for purposes of navigation, but chiefly to create a current in the old riverbed, and prevent the water from stagnating. Tugs will be able to pass under the railway bridge without difficulty, but larger craft will have to continue using the present entrance.

FLOTSAM, JETSAM AND LAGAN.

Lieutenant-Commander F. C. Davenport, U. S. N., has been detailed to take charge of the eleventh light-house district at Chicago.

Iron ore shipments for all Lake Superior ports on August 1, aggregated 6,818,887 gross tons, against 5,415,560 tons on the same date in 1897, or a gain of 1,403,327 tons.

Capt. J. M. Clow has purchased a tug to take the place of the Agnes Arnold, which was burned at Chambers Island early in the season. The craft is the Richard R. Endress and was purchased of Mason Bros., of Gladstone, for \$3,000.

The wooden steamer George G. Hadley has been sold by the Union Safe Deposit and Trust Company and Leander Burdick, of Toledo, to the Phoenix Coal Company, of Chicago, which is operated by W. P. Rend. The price of the boat is not given.

A statement of the Canadian Sault canal traffic for the three months ended June 30, shows that 1,506 vessels passed through, as against 1,097 for the same period last year. The tonnage was 1,124,923, as compared with 929,769 and the freight 14,419,197 tons, as compared with 10,449,199 last year.

The Sheriffs Manufacturing Company, Milwaukee, has just received from Montreal an order for a 9-foot wheel for a tug recently purchased by an owner of a tug fleet who has already in use three wheels of the Sheriffs make. An order for a small wheel to be shipped abroad was also received from New York this week.

The new battleship Illinois will be launched on September 20, and the Kearsarge and Kentucky, which were launched in March, will be ready to go into commission early next year. Thus three fine examples of American shipbuilding will soon be added to the new American navy, which is destined to be one of the largest, as it already is the finest in the world.

The larger of the two light-houses at the east pier at Port Dalhousie was fired by lightning last Friday morning and was burned down to the pier level. The light-house was built in 1893 and had revolving lights and all the latest machinery. The other light-house at the end of the pier has only a stationary light. The light-house keeper lost all his books and personal effects. The season's outfit with the exception of one barrel of oil, was also destroyed.

The tug Blazier and dredge No. 1, of Toledo, are now at Collingwood, Georgian Bay. Both vessels are American craft, with American registers. It is reported that Canadian officials at Collingwood notified the captain of the Blazier that his two firemen could not work on the boat in Canadian waters, and Canadians had to be substituted. It is said no action of this kind has ever been taken with Canadian boats coming to this side.

Several American steamers are booked to visit Toronto, Ont., soon and Toronto marine men held a meeting to protest against allowing them to do so. The reason is, that a Canadian steamer cannot trade from one American port to another without first being inspected by an American steamboat officer, but vessels from the United States can come to Canada and carry passengers from one Canadian port to another, without any inspection whatever. This the Canadian vessel owners claim is an injustice, and legal advice is to be taken.

Capt. Dunham, of Chicago, does not share the belief which has been widely expressed that when the St. Lawrence canals are enlarged vessels will run from Duluth to Liverpool. "They tried that plan many years ago," said the captain, "and lost more money than their boats were worth. I don't see how it could be any more successful now. Vessels that can run even through the enlarged canals will not be big enough to compete in ocean traffic. No doubt a great deal of trade will be done with Montreal and Quebec, but cargoes for Europe will be transferred to large vessels at either one of these ports."

If present intentions are carried out the popular whaleback excursion steamer Christopher Columbus will make her last trip between Chicago and Milwaukee the present

season on Sunday, Sept. 4. From Chicago she is to proceed to Lake Superior for several excursion trips, following which she will go to Marinette and fulfill an engagement made early in the season. This will wind up the season for the big whaleback. It is understood that she will winter at Manitowoc in company with those steamers of the Goodrich fleet which are not called upon to perform winter service. Heretofore the Columbus has always wintered at West Superior.

At the meeting of the Sandusky city council, held on Monday evening, \$700 was appropriated from the general and incidental fund to be used in connection with \$1,400 from the Baltimore and Ohio, and Columbus, Sandusky and Hocking railways in improving the channel at the mouth of the bay, where a bar had formed and gave deep draft vessels considerable difficulty in coming in and going out. The government dredge Maumee will do the work, which will be under the supervision of Assistant Engineer Blunt. The money appropriated by the city and railways will, it is expected, be sufficient to improve the channel to a depth sufficient to admit large tonnage.

A BIG LAKE CARGO.

The actual weight (including one per cent. for moisture), of the recent cargo carried by the Bessemer line schooner Fritz was 6,960 gross, or 7,795 net tons. It is by long odds the largest cargo ever moved on the lakes. It is equal to 260,000 bushels of wheat. If loaded into cars of twelve tons each, there would be 650 cars, or sixteen trains of forty cars each. If the Fritz had loaded to seventeen feet five inches, a depth to which some vessels are now loading from Lake Superior, her cargo might have been increased to about 7,200 gross or 8,064 net tons. If loading grain out of Chicago on eighteen feet draught this vessel would carry 285,000 bushels of wheat, or 530,000 bushels of oats, so far as weight is concerned.

SUPPLY STATION AT BUFFALO.

Commander Hanford, of the Tenth Light-House District, and Major Symons, of the U. S. Engineer Corps, are preparing a joint report which, when sent to the Government Light-House Board will ask for a central supply station at Buffalo. The central location of Buffalo in the district is given as the reason for selecting it as the proper point at which to locate a station. Should a distributing station such as the two government officers mentioned believe is necessary, be sanctioned by the general board, Major Symons says that the first cost of necessary buildings and equipment would be in the neighborhood of \$50,000. It would include storehouses and buoy stations. It would further mean a concentration of all supplies required in the district.

HIGHER SPEED BATTLESHIPS.

Higher speed in new battleships was decided upon on August 9 by the Naval Board of Construction. But the board opposed making new designs for these ships, and recommended that bids be opened on September 1, as originally proposed. This action is taken in the hope that the builders will submit plans and bids for faster ships, and the Cramps and the Newport News shipyard have already promised to send in such bids. Engineer-in-Chief Melville dissents from the recommendation of the board, and sends in plans of engines for speeds of seventeen and eighteen knots; but for the latter speed he wants 600 tons additional displacement if the 1,200-ton coal capacity and 6,300-knot steaming radius are to be preserved. The inherent danger in increasing speed without proper increase in displacement will be a crowding of machinery and a continuance of unsufferable heat condition in the fire and engine rooms.

DETROIT MARINE POST OFFICE.

LETTERS REMAINING ADVERTISED IN DETROIT, MICH., POST OFFICE AUGUST 16, 1898.

To get any of these letters, addressees or their authorized agents will apply at the general delivery window or write to the postmaster at Detroit, calling for "advertised" matter, giving the date of this list and paying one cent.

Advertised matter is previously held one week awaiting delivery. It is held two weeks before it goes to the Dead Letter Office at Washington, D. C.

Algate Arthur J., Str. Key stone	Heater Lessie
Anderson Capt. A., Sch.	Howe Frank
Burns Annie	Higbie Ralph
Noland Capt. F., Sch. An drews	Johenson John, Sch. Granada
Black W. A.	Luger A. M.
Beebe, Wm., 2, Str. Globe	Leitch John
Church Guy, Str. Ira Owen	McGown Chas.
Carter James, Str. City	Packer A., Str. Sevona
Cleveland	Powell Capt. Frank B.
Eby J., Str. Minnie Walker	Provost Frank, Str. Carnegie
Eaton Hoyt, Str. Dundee	Spooner James
Finnits Harry	Toban Capt. James, Tug
Faneuff Henry	Onaping
Finlaysen D., Str. Siemens	Vreeland Daisy
Greenley Alva, Str. Globe	Vaughan Harry A., Str.
Goode, Norman A.	Schuylkill
Harrington Timothy A., Str.	Zihshus Joe, Str. City of
Cambria	Alpena

F. B. DICKERSON, M. P.

THE MARINE RECORD.

TREASURY DECISIONS RELATING TO VESSELS AND MARINE INTERESTS.

The common carrier shall issue bills of lading, manifest or other evidence of receipt and forwarding—"shipment" defined—on a thorough bill of lading it is one shipment, though several modes of conveyance are employed—every separate shipment requires evidence that it has been made, and to the evidence the stamp is affixed.

TREASURY DEPARTMENT,
OFFICE OF COMMISSIONER OF INTERNAL REVENUE,
WASHINGTON, D. C., August 4, 1898.

Sir: This office is in receipt of a letter from Andrew Crawford (suit 1016), Ashland Block, Chicago, Ill., submitting a number of questions, and asking for rulings thereon.

1. A ship's 100 crates of berries by the same steamer to six different commission men. Do the manifests or receipts require one stamp or six stamps?

The act recites that for each shipment received for carriage or transportation the common carrier shall issue to the shipper or consignor, or his agent, or person from whom the goods are accepted, * * * a bill of lading, manifest or other evidence of receipt and forwarding. It seems that a shipment would mean the goods or property sent by means of a common carrier from a shipper (consignor) to a consignee. If there is more than one consignee in this shipment of 100 crates of berries and each consignee receives a part of the total number of crates shipped, that it is, as to each consignee, a separate shipment, though it all may be included in one paper, the tax is imposed on the shipment, not on the evidence of it. The stamp denoting payment for the shipment is affixed to the paper evidencing the shipment. This office holds that these are six shipments, and should be taxed 6 cents, one cent on each.

2. If the receipt is stamped in such case, does the manifest or bill of lading require to be also stamped?

From this question it is presumed that a bill of lading or manifest is given in addition to a receipt. If this is true, the manifest or bill of lading should have the stamp affixed to it.

3. Where goods are shipped by rail by a through bill of lading to a given point, and part of the intermediate line is by boat, is the stamping where the freight originates sufficient to cover the whole route?

The one shipment bears but one tax, although in completing the shipment, transit by rail, boat, or other method of conveyance is required.

4. Where no receipt is given for freight received, and the manifest is written up in a book used for that purpose and no bill of lading is issued, will it be a sufficient compliance with the law to affix the stamps in such book, or would it require separate 1-cent stamps for each shipment?

The stamps should be affixed to the evidence of receipt and forwarding for each shipment, whether this evidence is in the form of a bill of lading, manifest, receipt, or book, and the common carrier is compelled by law to issue this evidence of receipt and forwarding.

Each separate shipment requires a 1-cent stamp. If the manifest or other evidence contains 20 shipments, it will be a sufficient compliance with the law to affix internal revenue stamps to the value of 20 cents.

Mr. Crawford has been referred to you. You will please advise him accordingly. Respectfully yours,

MR. FREDERICK E. COYNE, N. B. SCOTT,
Collector First District, Chicago, Ill. Commissioner.

WAR TAXES ON SHIPPING, NO. 3.

TREASURY DEPARTMENT, August 9, 1898.

To Collectors of Customs, Shipping Commissioners, and others:

Your attention is directed to rulings of the Commissioner of Internal Revenue, by which stamp taxes are imposed under the war-revenue act on certain shipping documents and certain others are exempt from stamp tax.

The following papers are subject to a stamp tax of 10 cents each as "a certificate of any description required by law not otherwise specified in this act":

1. Certificate of registry. (Cat. 534.)
2. Certificate of enrollment. (Cat. 538-538½.)
3. Certificate of record of American-built vessel, owned by aliens. (Cat. 551.)
4. Master carpenter's certificates. (Cat. 532.)
5. Certificate of issue of temporary document. (Cat. 527.)
6. Certificate of ownership. (Cat. 526.)
7. Certificate of surrender of document. (546.)
8. Certificate of payment of tonnage duty (each time presented). (Cat. 491.)
9. United States bill of health. (Cat. 494.)
10. Certificate to shipping articles, required by section 4512, Revised Statutes. (Cat. 1608.)

The following are excepted from the stamp taxes provided in schedule A of the war-revenue bill:

1. Copy of certificate of registry for official use. (Cat. 335.)
2. Certificate of admeasurement. (Cat. 564.)
3. Inspector's certificate of tonnage, etc. (Cat. 897.)
4. Certificate of deposit of ship's papers. (Cat. 568.)
5. Certificate of crew list. (Cat. 896.)
6. Notice of expiration of license. (Cat. 545.)
7. Permit to vessel to proceed to another district. (Cat. 504½.)
8. Permit to vessel to proceed coastwise. (Cat. 504¾.)
9. Coastwise permit to land cargo. (Cat. 485.)
10. Shipping articles. (Cat. 1605.)
11. Oath of master applying for new documents. (Cat. 547.)

Jurats (Synopsis 19669).—Jurats to affidavits required by the customs laws are not subject to stamp tax as certificates.

Bills of sale of vessels (Synopsis 19730).—Bills of sale of vessels are not subject to tax, but the certificate of acknowledgement required by law to be attached to said bill of sale is subject to 10-cent stamp tax.

Certificate of damage by port warden or marine surveyor requires 25-cent stamp on the original and no stamp on copies.

Manifests of vessels in ballast or with ship stores (Synopsis 19672).—No stamp is required on the manifest of a vessel in ballast, or with bunker coals or ship's stores only.

Shipper's manifest (Synopsis 19803). It is the duty of a common carrier to furnish a stamped bill of lading, receipt, or manifest to the shipper, which is subject to a 1-cent stamp tax.

Charter party (Synopsis 19790).—The stamp tax on charter parties applies only to registered vessels. It does not apply to enrolled or licensed vessels. (Synopsis 19653.) It also does not apply to barges. (Synopsis 19571.) No stamp on copies of a charter party is required for customs entry of cargo from or clearance of cargo for a domestic port of any ship, vessel, or steamer.

Licenses (Synopsis 19819).—Licenses (Cat. 541, 541½, 542, and 544) are not certificates within the meaning of the new internal-revenue law, and are exempt from stamp tax.

O. L. SPAULDING, Assistant Secretary.

SHIPMENTS OF SEAMEN ON VESSELS OWNED BY THE WAR DEPARTMENT.

TREASURY DEPARTMENT, BUREAU OF NAVIGATION, }
WASHINGTON, D. C., August 6, 1898. }

SIR.—I return herewith your accounts for the month of July last.

It is noticed that you have charged for the engagement of a number of seamen on vessels purchased and owned by the War Department.

The laws regarding shipments contemplate charges only in the case of seamen on merchant vessels of the United States. This office has no objection, however, to the shipment of the seamen before you.

Please make out new accounts, eliminating the charges in question, and return the accounts to this office without unnecessary delay.

Respectfully yours,

E. T. CHAMBERLAIN, Commissioner.
United States Shipping Commissioner, New York, N. Y.

YACHTS UNDER COMMISSION MAY NOT ENGAGE IN TRADE.

TREASURY DEPARTMENT, August 5, 1898.

SIR.—This office is in receipt of the application of A. Van Rensselaer, forwarded by you, for a special commission for the yacht called the May, which vessel is of foreign build, owned by a citizen of the United States, and to be used for the purpose of transporting supplies to Ponce, Puerto Rico, "under the auspices of the National Relief Commission."

Commissions granted in certain cases to yachts are furnished to vessels, as stated therein, navigating on pleasure voyages, and not transporting merchandise. The law does not authorize such commissions if merchandise is to be transported in them, nor if they are to be used for other than pleasure purposes.

Under the circumstances, therefore, the department declines to grant the special commission. Please advise the applicant accordingly.

Respectfully yours,

O. L. SPAULDING, Assistant Secretary.
Collector of Customs, Philadelphia, Pa.

DREDGING AT CLEVELAND HARBOR.

Some loaded vessels having gone aground in the channel north of the Lake Shore railway bridge, the question has been raised why the channel is not dredged by the United States to maintain greater depths.

To save inquiry which naturally arises in each particular case, the following letter of inquiry, and the reply, which fully explains the reason, are given as matters of interest to the commercial and lake marine:

CLEVELAND, O., August 11, 1898.

Col. Jared A. Smith, Corps of Engineers, U.S.A., Cleveland:

DEAR SIR.—There have been several instances lately of boats grounding in the Cuyahoga river just north of our bridge. Some of the grounding has been done in such a location as to arrest the closing of our bridge until the boat was released.

In view of the fact that the grounding of a boat in such a way as to force us to keep our bridge open for any considerable time would be a very serious matter to our company, I thought it best to call your attention to the case, knowing that you will do what you can to relieve the situation.

I first communicated with the Director of Public Works of the city, thinking that the dredging at this point was a city matter, but he advises us that it is not.

Yours respectfully,

E. A. HANDY, Chief Engineer.

U. S. ENGINEER OFFICE, 185 EUCLID AVE., }

CLEVELAND, O., August 12, 1898.

Mr. E. A. Handy, Chief Engineer L. S. & M. S. Ry. Co.:

DEAR SIR.—Yours of 11th at hand. Were it within my power, I should surely have every obstruction to navigation in the river, or elsewhere, removed; but you will, of course, understand that the whole matter is necessarily limited by law, and regulations made in conformity thereto.

Owing to the great demands upon the treasury, arising from conditions of war, Congress made no appropriations for

river and harbor works at its last session. It was hoped and expected that a general appropriation would be made for maintenance of channels, etc.

Under date of April 6, 1898, I submitted to the Chief of Engineers an estimate of \$20,000 for dredging in Cleveland harbor, to be allotted from the prospective appropriation. The funds previously appropriated are for specific purposes which do not include maintenance of water depths, and can not be applied for that purpose. The failure of Congress to make the appropriation, leaves not only Cleveland, but all other harbors, without a fund for maintenance by the United States.

At Sandusky and some other places this matter is understood, and the city, aided by interested parties, has taken up the subject and obtained authority to do the work at its own expense.

I regret that I have no means at my disposal to remedy the difficulty.

Very respectfully,
JARED A. SMITH,
Colonel, Corps of Engineers, U. S. A.

NOTICE TO MARINERS.

TREASURY DEPARTMENT,
OFFICE OF THE LIGHT-HOUSE BOARD,
WASHINGTON, D. C., Aug. 12, 1898.

MAUMEE STRAIGHT CHANNEL ENTRANCE GAS BUOY
No. 1.—Notice is hereby given that the characteristic of the light on this buoy, on the southeasterly side of the entrance to straight channel into Maumee Bay from Lake Erie, has been changed from fixed white to fixed white during periods of 10 seconds, separated by eclipses of 10 seconds.

By order of the Light-House Board:

RUSH R. WALLACE,
Commodore, U. S. Navy, Chairman.

TREASURY DEPARTMENT,
OFFICE OF THE LIGHT-HOUSE BOARD,
WASHINGTON, D. C., August 15, 1898.

SEUL CHOIX POINTE LIGHT STATION.—Notice is hereby given that, on or about August 25, 1898, the color of the tower at this station, on the easterly extremity of Seul Choix Pointe, northerly end of Lake Michigan, will be changed from red to white.

No changes will be made in color of dwelling, covered way, or fog signal house.

By order of the Light-House Board:

RUSH R. WALLACE,
Commodore U. S. Navy, Chairman.

POSITIONS IN THE LIGHT-HOUSE SERVICE.

LIGHT-HOUSE ESTABLISHMENT,
OFFICE OF THE LIGHT-HOUSE INSPECTOR, 9TH DISTRICT,
CHICAGO, ILL., Aug 12, 1898.

Notice is hereby given that several vacancies exist in the positions under the Light-House Board, in this district, which includes Lake Michigan, Green Bay and tributary waters lying west of a line drawn across the Straits of Mackinac at Mackinac Point, Mich. Among the positions to be filled are the following:

One engineer of light-house vessel.
Four assistant engineers of light-house vessels.

Persons who wish to apply for either of the foregoing positions should obtain the proper blank forms of application from this office, either in person or by mail, and after filling them out return them to this office. Those who have already filed applications need not do so again. Applicants need not appear in person.

Thirty days from the date of this notice all applications received will be examined, the applicants graded according to merit, and a list of those eligible for appointment sent to the Light-House Board.

C. O. ALLIBONE,
Commander, U. S. N., Inspector, 9th L. H. District.
Chairman, Local Civil Service Board.

EIGHT new torpedo boats are the latest addition to the German navy. They have a displacement of 155 tons when fully equipped, and can travel at the rate of 25 sea miles an hour. German materials have been used exclusively in building the boats. The body of each boat consists of nickel steel, and it is 161 ft. in length, 16.4 ft. wide, and 9.2 ft. deep. The equipment of all these new boats is the same; it consists of one quick-loading gun of 5 centimetres, and of one machine gun of 8 millimetres, as well as of a bow chaser above the water, and two broadside torpedo tubes. The boats built at the Germania yard have boilers on the Schulz system, while the Schichau boats are fitted with Thornycroft boilers. In addition to the use of coal as fuel, the boats have also arrangements for using tar-oil as fuel. Each boat can take a supply of thirty tons of coal and seven tons of tar-oil. The cost of constructing these torpedo boats, including the cost of arming them and making trial trips, amounted to about \$850,000.

LAKE ERIE.

Dr. Julius Pohlman, in an essay on "The Origin of the Eastern End of Lake Erie," says that it is generally accepted that the basin of Lake Erie is a valley of erosion, excavated by water in pre-glacial times from the undisturbed strata of Devonian rocks. The discovery of the many large pre-glacial rivers in Pennsylvania and Ohio, running into the lake basin, explain how this erosion has taken place. The Allegheny, however, which ran northerly past Dunkirk, does not account for the forty miles of lake valley between Dunkirk and Buffalo, another pre-glacial river emptying into the lake near Buffalo was necessary to complete the river system which occupied and excavated the valley of Lake Erie. There are no rocks on the lake shore between Buffalo and the mouth of Niagara river. Corniferous limestone underlies all the northern and eastern parts of the city, and attains an elevation of eighty feet at the northern outskirt on the edge of the second limestone terrace of Western New York. At the south of the city rock is found at a depth of twenty-four feet below the bottom of the lake. The tract of land between the southermost outcrop of the corniferous rock in Buffalo creek on the north and the southernmost limits of the city on its southern margin is popularly known as the Tifft farm. Here railroads are excavating a series of canals to facilitate their lake shipping. In the course of the construction of these artificial waterways test piles were driven down to determine the distance between surface and rock, which was supposed to be found at a moderate depth because the creek near by flows over a rocky bottom. But these piles revealed the fact that no rock could be found there, although they were driven down to a depth varying in different places between seventy and eighty-four feet. In one place rock was struck at eighty-six feet below the surface, which is only three feet above the level of the lake, and we are therefore justified in concluding that the bottom of this ancient excavation is at least eighty-three feet below the surface of the water. Now, which way did the river flow that excavated its valley here? It could go neither north nor east, for the corniferous limestone crops out all along the northern shore of the lake, and the mouth of Niagara river was undoubtedly closed at that time by the limestone terrace continuing from New York into Canada. It must have taken a westerly course through the soft shales of the Devonian epoch, and if we trace an imaginary line along the deepest portion of the eastern end of the lake from this ancient valley in a direction a little southerly of west, we can connect our pre-glacial river with the ancient outlet of the river system of the Erie valley opposite Dunkirk, and have a fair explanation of the origin of the eastern end of Lake Erie.

Surely no glacier can take any credit for this work, for the ice advanced here from the north northeast to the south southwest and the course of this ancient river was but little southerly of west, at least for some distance after its entrance into the present lake basin.

The glacial drift which fills this valley consists of a reddish pebbly clay in its lower portions; the pebbles are small, well rounded and taken from the Medina sandstone, pure and corniferous limestone, with a few fragments of shale. The upper part is slightly laminated, of a reddish grey color, and contains no pebbles; the whole is overlaid by a stratum of sand of varying thickness.

TORPEDO BOAT ENGINES.

The bureau of steam engineering of the navy has drafted the specifications for the machinery for the 16 torpedo boat destroyers and 12 torpedo boats authorized by the last naval appropriation bill. The propelling engines of the destroyers will be alike, and each will be placed in a separate watertight compartment. These engines will be of the vertical inverted cylinder, direct acting, triple expansion type, each with a high pressure cylinder 20½ in. in diameter, an intermediate pressure cylinder 32 in. in diameter, and two low pressure cylinders each 38 in. in diameter, the stroke of all pistons being 22 in. The indicated horse-power of propelling engines will be about 8,000 when the engines are making 327 revolutions per minute, the steam pressure at the engines being 250 lbs. per sq. in. above atmosphere. Propellers will be right and left, of manganese bronze or approved equivalent metal. There will be four water tube boilers, constructed for working pressure of 300 lbs. per sq. in. The total grate surface will be at least 315 sq. ft., and the total heating surface at least 17,768 sq. ft. There will be four smoke pipes, one for each boiler.

The propelling engines which have been designed for the torpedo boats will be of the vertical, inverted cylinder,

direct-acting, triple-expansion type, each with a high pressure piston 14 in. in diameter, an intermediate pressure piston 22 in. in diameter, and two low pressure pistons each 25¼ in. in diameter; the stroke of all pistons to be 18 in. The indicated horse-power of the propelling engines will be about 3,000 when the engines are making about 350 revolutions per minute. The propelling engines will be placed in separate water-tight compartments, with high pressure cylinders forward and the low pressure cylinders aft. The main engines will be balanced in an approved manner. The framing of the engines will consist of vertical forged steel columns, stayed by forged and cast steel ties and braces. The engine bed plates will be of cast steel, supported on forged steel keelson plates built in the vessel. The crank shaft will be made in one section and will be hollow. The shafts, piston rods, connecting rods, valve rods, eccentric rods and working parts generally will be forged of nickel steel, as required in the specifications. The propellers will be right and left, of manganese bronze or approved equivalent metal. There will be three water tube boilers, constructed for a working pressure of 250 pounds per sq. in. The total grate surface will be at least 137 square feet, and the total heating surface at least 7,544 square feet. There will be three smoke pipes, one for each boiler.

SUN'S AMPLITUDES.

The following approximate amplitudes of the Sun's rising will be given each week in this column during the season of navigation. A second bearing may be taken by compass at sunset by reversing the east bearings given for the nearest latitude, as the change in declination for a few hours makes but a slight difference in the true bearing of the Sun's setting:

LAKE ERIE AND S. END LAKE MICHIGAN, LAT. 42° N.

Sunrise.	Bearing.	Bearing.
August 21	E. 16° N.	E. by N. ½ N.
August 24	E. 15° N.	E. by N. ¾ N.
August 27	E. 13° N.	E. by N. ¼ N.

LAKE ONTARIO, S. END HURON AND CENTRAL PORTION LAKE MICHIGAN, LAT. 44° N.

Sunrise.	Bearing.	Bearing.
August 21	E. 17° N.	E. by N. ½ N.
August 24	E. 15° N.	E. by N. ¾ N.
August 27	E. 14° N.	E. by N. ¼ N.

N. END LAKES HURON AND MICHIGAN, LAT. 46° N.

Sunrise.	Bearing.	Bearing.
August 21	E. 17° N.	E. by N. ½ N.
August 24	E. 16° N.	E. by N. ¾ N.
August 27	E. 14° N.	E. by N. ¼ N.

LAKE SUPERIOR, LAT. 48° N.

Sunrise.	Bearing.	Bearing.
August 21	E. 18° N.	E. by N. ¾ N.
August 24	E. 19° N.	E. by N. ½ N.
August 27	E. 15° N.	E. by N. ¾ N.

With a compass correct magnetic, the difference between the observed and true bearing or amplitude will be the variation for the locality. Should there be any deviation on the course the vessel is heading at the time of taking the bearing, the difference between the observed and the true amplitude after the variation is applied, will be the amount of deviation on that course. If the correct magnetic bearing is to the right of the compass bearing, the deviation is easterly, if to the left, the deviation is westerly.

MARITIME LAW.**INSURANCE CO. OF NORTH AMERICA VS. CANADA SUGAR REFINING CO. LIMITED.**

(Circuit Court of Appeals, Second Circuit, April 19, 1898.)

1. **MARINE INSURANCE—PROFITS—TOTAL LOSS.**—Under a contract of insurance of the profits on a cargo of sugar "against total loss only" there is no actual total loss of profits where any part, however small, of the cargo, is saved, and reaches the owner in condition to earn a profit; and in such case no recovery can be had.

2. **SAME—CONSTRUCTIVE TOTAL LOSS—MOIETY RULE.**—In the United States the owner may abandon ship or cargo, and treat the loss as constructively total, when the damage exceeds 50 per cent. of the total value.

3. **SAME—ABANDONMENT.**—In cases of constructive total loss, abandonment is indispensable to recovery of insurance, except when it could not possibly be of benefit to the insurer.

4. **SAME.**—Where insurance is upon the profits of a cargo, and not upon the cargo itself, a partial loss cannot be converted by abandonment into a constructive total loss.

Appeal from the District Court of the United States for the southern district of New York.

This was a libel in personam by the Canada Sugar Refining Co. against the Insurance Co. of North America to recover, under a policy of marine insurance on profits on a cargo of sugar. The Circuit Court rendered a decree for libelant (82 Fed. 757), and the respondent has appealed.

Before Wallace, Lacombe and Shipman, Circuit Judges.

OLD TIME NOTES.

Cleveland can boast of having among its citizens many wealthy marine men, in fact a greater number than any of the other four big lake ports, Chicago, Milwaukee, Detroit or Buffalo.

At the time when the Great Western was built vesselmen believed that if a cabin was constructed upon the upper deck the boat would topple over in ordinary weather. The builders of the Great Western went contrary to the prevailing belief, and the vessel was built with an "upper cabin."

The following list includes the vessels that dared the waves on the lakes between 1830 and 1850: Nile, Vandalia, Emigrant, Phenix, Oneida, Globe, Manhattan, Cuyahoga, Alleganey, Gov. Cushman, Indiana, California, Pocahontas, Tioga, Dunkirk, Olean, New York, Evergreen City, Fountain City, Empire State, City of Fremont, Northern Light, Meteor, Susquehanna, M. B. Spaulding, Esquimaux, Equator, Elmira, Cleveland, Badger State, Genesee.

The first side wheel steamer on these inland seas was the Vandalia, built by Washington Haugerford. The Emigrant, built in Cleveland, was wrecked on Avon Point on her maiden voyage and her owners sustained a serious loss. The Oneida was last seen on Lake Erie. It is believed she foundered with all on board. The Phenix was burned on Lake Michigan, the Gov. Cushman blew up in Buffalo harbor, the Meteor sank on Lake Huron and the Esquimaux was lost on Lake Michigan. Capt. B. G. Sweet commanded the Phenix, and M. W. House was engineer.

It was many years after Robt. Fulton's invention of the steamboat that steam was used to propel vessels on the lakes. The first steam vessels were: The Chicago, United States, DeWitt Clinton, Robt. Fulton, Constitution, Anthony Wayne, Missouri, Jas. Monroe, Jas. Madison, Julia Palmer, Rochester, Buffalo, Erie, Chesapeake, Fairport, Cincinnati, Helen Strong, Huron, Great Western, Cleveland No. 1, Superior, Rhode Island, Griffith, America, St. Louis, Southiner, Chittawa, Niagara, Illinois, Sultana, Ohio, Saratoga, Alabama, Queen of the West, Telegraph, Fashion, May Queen, Atlantic, Albany, Milwaukee, E. K. Collins, Arrow, Carrian, Northerner, Sandusky, Keenewan, Swallow, North Star, Canada, Northern Indiana, Michigan Southern, Western World, Plymouth Rock, Massachusetts, Mississippi, Western Metropolis, City of Buffalo.

Capt. Chas. Gale commanded the schooner Eureka when she started from Cleveland to San Francisco by way of Cape Horn, in 1849. It was when California was the Eldorado, and the Eureka carried a goodly number of passengers. The schooners Handy and Correspondent made successful trips to Liverpool at about the same time. The first schooners on Lake Erie were the Aurora-Borealis, Farmer, S. B. Ruggles, Hudson, Huron, Mariner, N. C. Winslow, Alert, Constitution, Herald, Minerva, Amazon, Everette, Seaman, Mayflower, Freeman, Cascade, Harrison, Gen. Worth, Big Z, Harman, Handy, Eureka, Rialto, H. M. Gates, Reed, Milan, Midnight, Middlesex, Big Iroquois, Big Isabella, Swan, Konkioeka, O. V. Brainard, Sultan and Correspondent. The Queen, Charlotte and Superior were taken from the British by Commodore Perry.

Many of the vessel owners whose offices are located in the Perry-Payne building have commanded vessels. One of these is Geo. P. McKay. Thos. Wilson was also a sailor, as was Geo. Gardner, Jas. Stone, G. W. Jones and Capt. Kay. Perry Johnson was an old captain. He commanded the Aurora-Borealis. Hank Seymour, John McKinstry, Owen Myrick, Cal. Spencer, D. P. Nickerson, Wm. Marsden, John Varner, Hiram Van Tassel, Chas. Gale, S. F. Drake, Frank Perew, and Jim White were noted captains in their time. Capt. McKinstry sailed the S. B. Ruggles, Seymour the Hudson, Spencer the Huron, Myrick the Mariner, Farmer and Alert, Nickerson the Winslow, Marsden the Amazon, Varner the Everett, Van Tassel the Seaman, Gale the Harman, and Drake the Midnight. Capt. Carpenter commanded the Freeman, Capt. Glasgow the Cascade, Moore the Rialto, Lacey the Middlesex, and Webster the Sultan.

THE MASTERS' MANUAL.

The Masters' Manual, issued from the insurance agency of George L. McCurdy, Royal Insurance building, Chicago, in the interests of the "Great Lakes Register," has just been published and will be sent free to masters sending their address. The annual contains nothing but what masters should know and is a welcome addition to the current technical literature already being published. The thanks of the entire lake marine are due to the compilers of the Masters' Manual, which they should read, learn and mentally digest.



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CLEVELAND, O., AUGUST 18, 1898.

ALL sorts of pictures of the U. S. Navy have been issued by nearly all sorts of publications for advertising and other purposes. The Franklin Engraving Co., Chicago, seem to have copyrighted numerous selections for those who desire to use them.

A SHOWY colored plate got out as a supplement by one of our contemporaries last week illustrates, in a manner, the U. S. S. Kearsarge, now building at Newport News, Va. The query presents itself as to what is meant by the code signal H. J. R. B. flying from her port fore yard arm. It is not a geographical signal or the Burgee would be uppermost, nor is it her name, as there would then be a pennant uppermost, the name of a merchant vessel exhibited from a U. S. battleship has no significance in such a picture or connection, and if any of our readers who are acquainted with the code can inform us what such a four-flag signal indicates, we would be pleased to learn. Perhaps, as the picture is copyrighted, our contemporary might elucidate the matter, but not in any labored way, as a simple hint would be quite sufficient. Of course the Librarian at Washington is not expected to revise or correct colored pictures, he can but issue the copyright applied for.

LAKE REVENUE CUTTERS.

The decision to restore to the jurisdiction of the Treasury Department the lighthouse tenders and revenue cutters detailed for war service has brought to a crisis in the treasury the question whether the Algonquin and Gresham shall be returned to the lakes at considerable expense or kept for service at tide water, relying upon Congress to appropriate additional funds for new cutters for the lakes. The revenue service is anxious that the vessels should be sent back to the lakes, for while it is conceded that the expense would be quite heavy, yet it would not approximate the cost of building new ones, while the uncertainty of securing an appropriation causes the officials to feel considerable apprehension that the new cutters would not be properly authorized. It is pointed out that when Senator McMillan undertook to secure an appropriation for two more lighthouse tenders the principal argument upon which his request was refused was that the government at the close of the war would find itself with a large auxiliary navy on its hands, several vessels of which might easily be sent through the canals to the great lakes. While it is entirely practicable to send vessels of considerable size through the canals yet the government is not disposed to do any more of this work than is absolutely necessary. It is an interesting question, therefore, whether Congress will be willing to appropriate half a million dollars which would be necessary to provide three cutters and two large lighthouse tenders when three cutters and several other available vessels could be sent to the lakes at the cost of canalling.

CENSURE ON AN UNCERTIFICATED MASTER.

From the Liverpool Journal of Commerce, July 29.

The United States law denies American registry to vessels owned by American citizens and engaged in foreign trade unless built in the United States, except under onerous conditions; foreign vessels are also excluded from participating in the United States coasting trade, which embraces voyages between ports on the Atlantic and Pacific coasts, a matter of over 15,000 miles around Cape Horn, as well as from port to port on either coast; and all officers of United States carrying craft must be citizens of the Great Republic unless away from home and unobtainable. One of the most convincing exponents of the advantages attending the introduction of a bill admitting foreign-built merchant ships to the American register, Mr. Eugene T. Chamberlain, Commissioner of Navigation at Washington, has often pointed out the many ways in which American capital seeks the sea under foreign flags owing to the restrictions enumerated above. There is a considerable amount of American money invested in splendid steel sailing ships under the Hawaiian flag, for example, and those who chose this course will soon, doubtless, have the extreme satisfaction of seeing these vessels flying the Stars and Stripes when the annexation of Hawaii has become an accomplished fact. The control of foreign shipping is managed by American capitalists in various ways. In addition to buying vessels outright and running them under the flag of their previous owners, they become charterers for extended periods, and under certain conditions, which practically make the vessels American in all but the flag. Take, for example, the small Norwegian steamers in the fruit trade between the West Indies and the United States. Many of these vessels are actually built to the requirements of the prospective charterer, and thus practically become parts of the American ocean-going carrying trade, although apparently under charters covering many months. As a matter of fact the United States Shipping Commissioner at New York has reported that some of these chartered fruit carriers under the Norwegian flag are owned in New York. In 1890 British yards commenced to build special types of steamers for this trade, and Norway soon followed suit.

The law forbidding American registry to foreign-built vessels does not promote shipbuilding in American yards as intended, as evidenced by the fact that these fruit carriers are all built either in England or Norway. Nor does it altogether prevent Americans from putting their money in shipping. A citizen with a patriotic sentiment highly developed will perhaps refrain from taking advantage of the flag of another nation; but, as a general rule, the commercial instinct is for the free ship system. The inquiry into the circumstances attending the loss of the British steamship Belvidere on the Cuban coast some weeks ago, affords another instance of the methods adopted by Americans to evade, in some measure, the restrictive shipping laws. She was in this very fruit trade, bound from Jamaica to Boston, with a crew of forty, all told, and carrying two dozen passengers. Having been chartered by the Boston Fruit Co., composed of United States citizens, in the usual way, they inserted a clause entitling them to place in command a master of their own selection, provided her owners were satisfied with the person chosen. The charterers apparently exercised their agreed-upon right, and appointed a master who was presumably an American citizen. At the time of the casualty he did not hold a British master's certificate, nor had he ever held such a document. Hence, for all practical purposes, the vessel was American for the period during which the charter held, and in this way defeated the aim of the United States law with respect to foreign-built vessels. She still, however, flew the British red ensign. Consequently, in the case of negligent navigation being proved against this master at any time, he could snap his fingers at English law, inasmuch as there was not any certificate to be suspended or cancelled. He may, and probably does, hold a United States license, although nothing is said to show this; but, of course, under the circumstances it would be perfectly safe. Neither England nor the United States could touch it. Yet the court of inquiry found that he had committed an error of judgment in setting too fine a course, and severely censured him for leaving the bridge after being called by the chief officer, knowing the vessel was in close proximity to the Cuban coast, and before having troubled to ascertain the true position of the steamer. Rightly or wrongly, had he held a British master's certificate, the chances are he would have been suspended for three or six months. The vessel was well built and properly manned. Nothing could be justifiably urged against her in either respect. Nevertheless, a question arose with respect to the

manner in which the watches were divided at night. Here the master was decidedly deserving of the censure allotted to him by the court. Instead of keeping a third man on deck at night, in addition to the lookout and the helmsman, as he could have done with the number at his disposal, he chose to let the ship take her course with only the two men fully occupied at responsible posts and the officer on the bridge.

A master who acts thus with plenty of men may have an excuse, but he certainly will not be able to justify his method when before a court of inquiry. In this instance the court failed to find any valid excuse, for, although the master did not know anything about the Merchant Shipping Act, he admitted his familiarity with the regulation that there should be three men in a watch at night besides the officer in charge of the deck. It is useless for shipowners to put an effective crew on board a ship if the master prefers to keep part of them below at night in order to scrub paintwork and holystone decks by day. The safety of the ship is of more importance than detail of that nature. One thing is certain, the master of the Belvidere may thank his lucky stars he does not hold a British certificate. Owing to this peculiar circumstance he can only care for the censure bestowed upon him by the court in so far as it will prevent him from getting a similar appointment from the charterers under the British flag. The casualty will probably have little, if any, effect in precluding him from appointment as master under the Stars and Stripes. As a matter of fact, provided the charterers are desirous, he may be appointed forthwith to another British ship in command, although if he had been in possession of a British certificate at the time of the casualty that would probably be impossible by reason of a short suspension.

TRIPLE VERSUS TWIN SCREWS.

Writing upon the result of a series of tests carried out by the French government at Brest, with the battleship Charlemagne, and intended to determine the relative merits of twin and triple screws, a correspondent of the Glasgow Herald says:

The aim in adopting three screws is to get low speeds by working one or two of the engines at maximum, or a high and therefore efficient power, leaving the other idle. Trials were made with the Charlemagne developing the same power with two and with three engines. With the two side engines working, the power realized with 105 revolutions was 5,258 indicated horse-power, while with the three engines running the revolutions were reduced to 94 per minute for 5,166 indicated horse-power. With the three engines doing 94 revolutions, the coal consumption was equal to 1.47 pounds per horse-power per hour, and at 105 revolutions, with two engines, it was only 1.33 pounds per horse-power per hour, so that the two screws for this particular power gave a higher economy to the extent of nine per cent. when the consumption per 1,000 miles is taken into consideration. The coal consumptions given, it is well to note here in passing, do not include that for any of the auxiliary machinery, pumps, electric engines, steering, etc. If the two screws working thus at half power are more economical than the three, wherein is the advantage of the three screws? Moreover, there was a better speed for the twin engines running than for the triple screws. The difference in the total power in each case is inappreciable, yet, with the three engines, the speed was only 13.95 knots, against 14.16 knots for the two engines. It is evident that the slip of the three propellers is greater than with the two, and that is probably accounted for by the fact that the center propeller has to work in more or less disturbed water. Trials were not made in this case with one screw propeller only, but with other ships the utility of three engines has not been established. A Russian ship, with the center screw running and the two side screws idle, required the same power to get 10 knots that gave 12½ knots' speed to a ship of the same size and displacement with only two engines and screws, so that while the consumption of the one engine might be less per unit of power, this advantage was forfeited because of the greater power required. The Charlemagne on her 9,000 indicated horse-power trial of 24 hours' duration made 16.41 knots for 9,270 indicated horse-power, with the three engines running 112½ revolution, and the coal consumption was 1,547 pound per indicated horse-power per hour. This does not include auxiliary machinery, so that it is quite 30 per cent. higher than is realized in our later British ships. Again, as to speed, our ships of the same size and type get 17 knots for the same power.

PROGRESS OF WORK ON PANAMA CANAL.

Consul General Gudger, of Panama, recently issued a report on the progress of the Panama canal construction, which may seem somewhat surprising in view of the general impression that very little has been done since the old company went into liquidation several years ago. A new company was organized and work begun in 1894, since which time about 3,000 laborers, on an average, have been employed. The new organization is composed mostly of Frenchmen, as was the old one. Some time during the next 12 months a committee will investigate the progress of the work, and if a favorable report is made it is expected that means can be procured for pushing the work more rapidly. The visit by this committee is looked forward to as a turning point, as then it will be decided whether the work will cease or be prosecuted with greater vigor. If after that time the work is continued at all it is expected that the force will be so increased that the canal can be finished in from 7 to 10 years.

The canal is now practically finished from Colon, on the Atlantic, to Bujeo, a distance of 14 miles. The total length of the route from Colon to Panama, on the Pacific, is 54 miles. The work already completed is on the least difficult and least expensive part of the route. The width of the canal will be 160 feet on top and 72 feet on the bottom except through the culebra cut, where it will be 78 feet on top and 29 feet on the bottom. This cut presents the most difficult problem of the whole undertaking, and it was in consideration of the difficulties encountered at this point that the plan of building the canal without locks had to be abandoned.

Work was first begun on the canal in 1882, and continued until 1889; when there was an interruption until 1894. Most of the time from 1882 to 1889, 10,000 laborers were employed. It is estimated that fully \$100,000,000 has been expended for machinery up to the present time, a large part of which is now scattered along the river and stored under sheds rusting away in the damp climate. The cost for labor, materials, salaries, etc., has been estimated at \$275,000,000. The canal is about one-third completed and it is thought that with what machinery and materials still remain, \$150,000,000 will be required to complete the entire work.

BAY CITY LAUNCHES.

The launches at both West Bay City shipyards were very successful on Saturday last and were witnessed by large crowds of people.

The schooner John A. Roebling slid down the ways at 12:15 o'clock at the Wheeler yard. The Roebling is owned by the Bessemer Steamship Company and is a sister ship of the company's schooner John Fritz, which recently left the yard. The new boat is one of the largest on the lakes, and is equipped with all the latest improved labor-saving devices for loading and handling cargoes. The cabins are finished in hardwood and the entire craft bears the stamp of the careful attention to details which is found on all the Bessemer boats. The new boat will probably be ready to leave with the steamer Samuel F. P. Morse, now being completed.

The schooner Chickamauga, the largest wooden vessel ever built in Bay City, was launched at Davidson's shipyard at 4:45 o'clock. The Chickamauga is very strongly constructed, having double steel keelson plates, steel chord, steel arches and is diagonally strapped as well. Dimensions 335 feet long, 45½ feet beam and 25 feet depth of hold. The equipment is thoroughly modern including steam pumps, steam deck hoist, steam windlass and patent stockless anchors. The Chickamauga is very conveniently arranged, so that the cargo may be handled economically. She has 11 cargo hatches, all of which are spaced 24 foot centers. The cabins and appointments of the Chickamauga are all spacious and are fitted in the hardwood cabinet finish. The large pony boiler is located forward. The capacity of the Chickamauga is 5,000 net tons on a draft of 17 feet, or 150,000 bushels of wheat on a draft of 17 feet. When launched the Chickamauga was all ready for loading and is now on her maiden trip.

ANOTHER WEST SUPERIOR DRY DOCK.

The American Steel Barge Company will soon begin the construction of a new dry dock. The city council has voted to extend the dock lines in the channel upon which the plant is situated, so that vessels destined for the new dry docks could reach them. Several months ago the

company decided to build the proposed dock, but owing to the inability of vessels to reach the site selected work was postponed until the city council extended the dock lines. The officers of the company stated that the new dock would be larger than the present one and would enable the company to handle all vessels that may desire dockage for years to come.

ALGOMA HARBOR WORK.

The Algoma Record announces that the government dredge will complete the improvement work at that point next week. When the present job has been completed the harbor will be in better shape than for many years. From the harbor entrance up to the steamboat docks there will be at least 15 feet of water. The channel here was 100 feet wide and with only 10 or 11 feet deep in the shallowest spots. The width has been increased to 130 and 160 feet. From the steamboat landing to the bridge the width will be 100 feet and depth 10 feet.

STEEL WORKS TO COMBINE.

A director of the Minnesota Iron Company, says the Iron Trade Review, is authority for the statement that while the negotiations are in progress for the consolidation of that company and the Illinois Steel Company, the project thus far is not near conclusion. A committee composed of representatives of each of the two companies was appointed recently to go over the books and make a report at a joint meeting of the boards of directors. This committee was to present its report at a meeting held in New York on Wednesday of this week. What will be done as a result of this report is still to be decided. On the same authority it may be said that at present there is no talk of a third iron and steel concern becoming a party to the deal. It is probable that the Elgin, Joliet & Eastern Company is the company to which reference has been made as the third factor in pending negotiations. Its relations with the Illinois Steel Company are already close and the steel company's freight is an important part of its business. We have commented heretofore on some phases of the proposed merging of ore and steel interests. The possibility that the Minnesota Iron Company's Mesabi competitor might acquire such an interest in the steel company as to become the latter's dependence for Mesabi ores, is doubtless an element of no little importance in the transaction.

SURPRISING ELECTRICAL DEVELOPMENT.

It is figured that in 1884 the total investment in electrical appliances throughout the United States did not aggregate much over \$1,000,000, while to-day the capitalization of all the electrical concerns in the country is fully \$1,900,000,000. In 1884 a 50-kilo watt dynamo was considered a large machine, and the price of dynamos was about 20 cents per watt of output; at the present time the largest size of generator built is of nearly 5,000 watt capacity, and dynamos in comparatively small sizes, without switch boards, now cost about 2 cents per watt. It is estimated that about \$600,000,000 has been invested in electric lighting stations and plants in the United States. There are to-day in the United States about 14,000 miles of electric railroad, with a nominal capital of about \$1,000,000,000 and employing about 170,000 men. People can now actually converse at a distance of 1,800 miles, and conversations at distances of 1,500 miles are common. There are now over 1,000,000 telephones connected with the country's telephone service, employing a capitalization of about \$100,000,000 with 40,000 stations, and about 900,000 miles of wire. Every day about 17,000 employees make on an average more than 3,000,000 telephone connections. Truly this is an age of progress that is without parallel in the past.—Wall Street Journal.

A CHICAGO LAUNCH.

The steel schooner Maia, building at South Chicago for the Minnesota Steamship Co., will be launched on Saturday afternoon. The Maia is nearly a duplicate of the Australia of the Corrigan fleet and is the last boat now on the stocks at the shipyard. After she is disposed of the new fireboat for the city of Chicago will have her keel laid. Work for this boat is already being cut out and the force at the yards will make short work of it when the task of putting the pieces together begins. It is expected to deliver the fireboat to the city during the season of navigation.

A LAKE ERIE COLLISION.

A collision occurred on Lake Erie between the steamer Maggie Duncan and the Mutual liner Coralia, on Wednesday. The Maggie Duncan put into Sandusky, badly injured.

It is estimated that it will cost about \$1,200 to repair the steamer Coralia. Four plates and part of her wale strake will have to come off. Both boats were bound down and the Duncan had two vessels in tow. The Coralia was struck at her gangway. It is said that the Coralia signaled the Duncan to pass and the Duncan answered by blowing two whistles. Just as the Coralia was about to pass the tow line of the last vessel in the Duncan's tow parted.

The Maggie Duncan had her bow smashed in down to a point just above the water line and back to the collision bulkhead. She will require almost an entire new bow. She leaked badly. A piece of canvas was placed over the break so that the leak was partially stopped, and by constant pumping she was kept afloat. H. E. Runnels, of Port Huron, manager of the fleet to which the Duncan belongs, will meet representatives of the underwriters and arrange for a survey.

A SALT-WATER FAKE.

The Electrical Engineer, of London, with its usual conservatism and perspicuity, expresses its opinion of the Electrolytic Marine Salts Co.'s scheme as follows: A "Yankee" writing to the Financial Times claims that the recovery of gold and silver from the sea can be effected commercially. He says that the Electrolytic Marine Salts Co., which has its plant on the coast of Maine, started operations on February 4 with five machines, which were increased to 114 on March 15, and on May 8 a further increase to 239 was made. Some five million tons of water were manipulated during the period named, and the product for the four months is said to be 940 ounces of gold and 1,814 ounces of silver (worth about £5,000), at a cost of less than £1,000. The second plant of 5,000 machines is now being constructed, and the "Yankee" says "the mine being on the mother lode, there is no danger of losing the vein." A three per cent. dividend has been declared by the company, and yet we prefer to wait another year before believing that the "mother lode" has been commercially attacked.

CERVERA'S FLEET AND THE MAINE DISASTER.

It seems that, after all, Spain has given unwilling, but very convincing testimony as to the manner in which the battleship Maine was destroyed in Havana harbor. At the time of that catastrophe Spanish officials loudly insisted that the cause was an internal explosion of one or more magazines, the result of "carelessness and a notorious lack of discipline on the American ships." But the board officers appointed to report upon the result of our gun fire upon the ships of Admiral Cervera, sunk in the Santiago fight, incidentally find a valuable object lesson in the appearance of these ships that has a direct bearing upon the destruction of the Maine. Three of the four Spanish warships were blown up by their own magazines, and one of them had every magazine exploded, with all its torpedoes in addition. But as compared with the wreck of the Maine, there was no upheaval of the keel and little bulging of the plates except in the immediate vicinity of the point of impact; the effect of the explosion was always upward, the protective deck was sometimes lifted, but, except for the springing of a few plates, the hulls were intact. In other words, the evidence gathered from the wrecks of these Spanish warships, that in armor and guns were practically superior to the Maine, conclusively shows that the latter ship was sunk by external explosion, however brought about.—Engineering News.

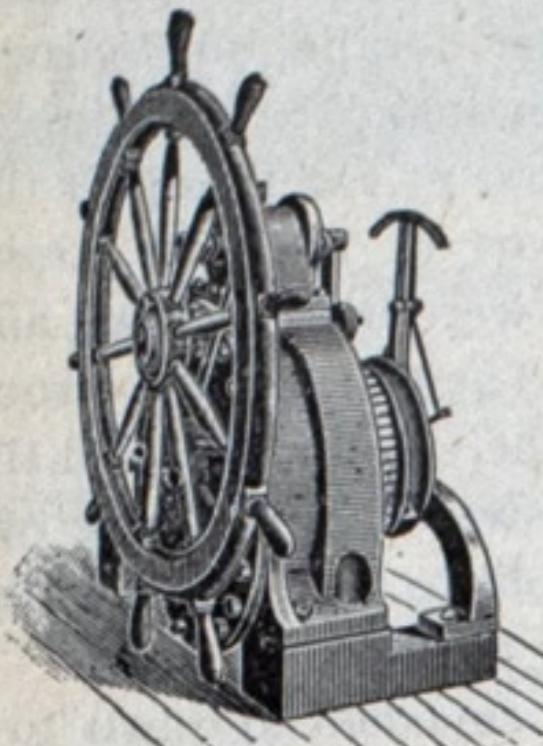
JOB IN THE LIFE-SAVING SERVICE.

General Superintendent Kimball, of the life-saving service, has sent the keepers of the life-saving stations in the eleventh district notices that an examination will be held at Grand Haven, Mich., Sept. 22, of such keepers in the district as care to compete to fill the vacancy caused by the death of former Supt. Robbins. The salary of the position is \$1,800 per annum, and the successful applicant will be required to file a bond for \$50,000, according to the rules of the service.

VESSELS CLASSED.

Vessels classed or rated by the American Shipmasters' Association in the "Record of American and Foreign Shipping" this week, are as follows: American barge Enterprise, owned by the Philadelphia and Reading R. R. Co.; American three-masted schooner Norman, owned by Messrs. Bull & Knowlton, of New York City; British scow Bruce, and Swedish galliot Thalia.

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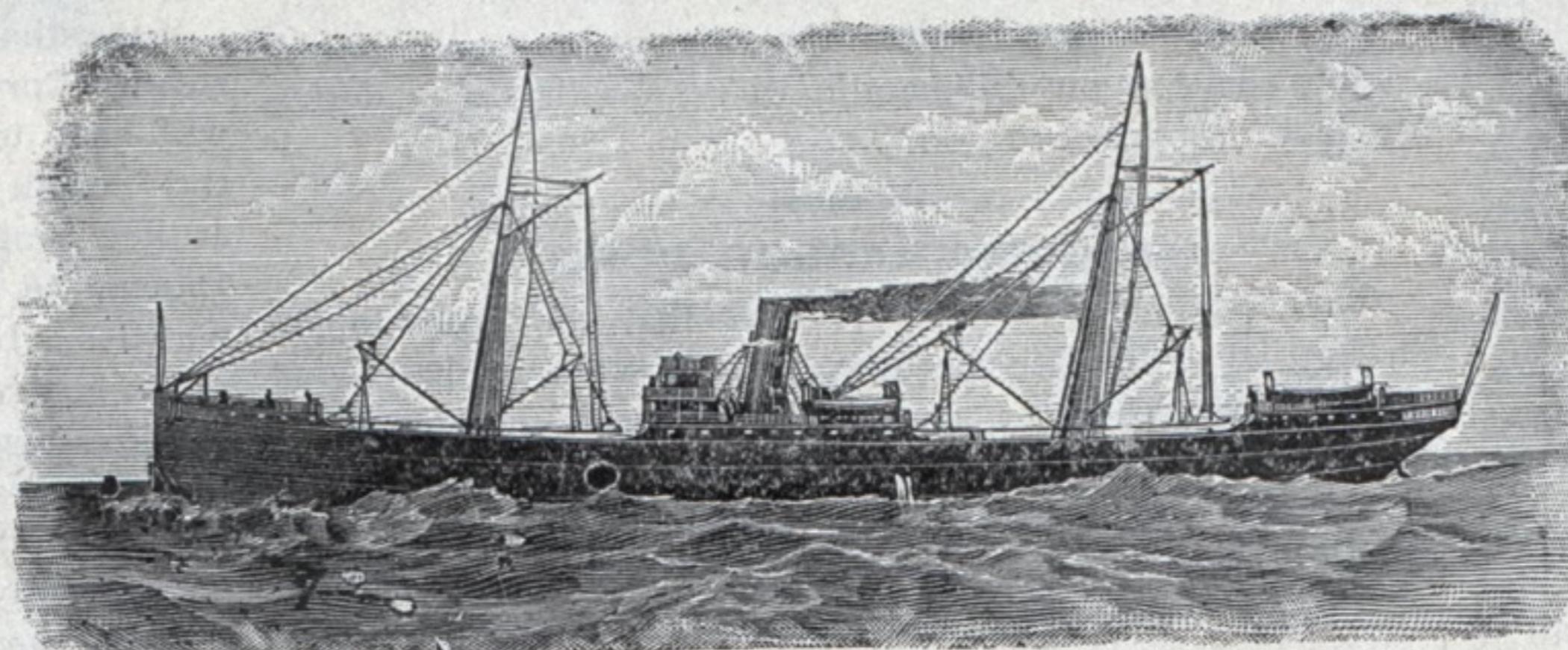
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THE POLLY ANN.

'Twas in the rosy blush of morn upon a bright June day that the canal-boat Polly Ann from Dayton took her way. She was headed for Toledo upon the dark Maumee, and the make-up of her cargo was a lovely sight to see. Of dried fruit there were invoices great, with oats, peas, and broomcorn, and a deck-load of nice fabrics that glistened in the morn; a place was found amidships for a sleek and comely steer, tho' steer-in' a boat amidships was thought amazin' queer. There were Capt. Jones, his daughter Sue, fair and sweet as any bride; Jim, the bold horse engineer, who reigned upon the tow-path side; Bill Snooks the urbanie steersman, who with taffy plied bright Sue, these were the merry gondoliers of those waters far from blue. When the noble craft set sail the air was balmy, clear, and warm, but in the watches of the night there rose a fearful storm. First the rudder was unshipped, and just at break of day stove and pipe were jettisoned that the craft might make her way. Thus it was rendered very clear that with all her trials dread, we can not claim she had stove up, whatever else be said. Borne were all the dire mishaps until a pitiless blast swept off the girth and breeching, which were in the dark deep cast. For three weary days and nights on those fearful waters wide the gallant crew labored with, no gleam of hope described. Although three knots had been sped, easy as steed could trot, 'twas knotty point if e'er she made another knot or not. The stocks of pork and whiskey all gave out and in despair at once a signal of distress was thrown upon the air. The dismal sign was answered, for a Yankee peddler bold whose stock was very numerous had by the towpath strolled. Quick as thought the merchant prince by trumpet was asked whether the needed goods was carried. Lo! his "best holt" was leather. The life-boat it was quickly manned and scarce an hour had fled ere those hoss-milliners made repairs and on their way had speed. And joyful scenes were close at hand, such as are never known save by those who on the wild, wild waves all helpless have been thrown. As if waking from a fitful dream, screamed out the lovely Sue: "Now, dad, prepare for joyful times, Toledo looms in view!" "Nay, daughter dear, I greatly mourn that gloom should chase thy smiles that lovely burg is distant yet many long and weary miles." "Dad, as Chicago maidens say, for once you're off your base; these lovely scenes I've viewed too oft for shipwreck to ef- face. Full sure it is Toledo, I know it by the bogs; I know it

by a hundred things, but much best by its frogs. In memory shrank is that bulfrog that over there you see, I could pick him out from all the throng that haunt the dark Maumee!" Soon in a high priced restaurant, those mainly reared on hogs, sweet Sue and Bill talked of their cruise o'er daintiest dish of frogs.—Anon.

ADMIRALTY CASE.

Judge McDougall, of Toronto, has given judgment in the admiralty case of the steam tug Fern against the schooner Porter. The case was tried at Windsor, Ont. During the season of 1897 the Fern was engaged in raising the wreck of the Grand Traverse, which lay in the middle of the channel, over a mile north of the Colchester reef light on Lake Erie. The wreck was known to ship captains, and the fact that the Fern was raising her was also generally known. On Sept. 2, 1897, the Porter, Capt. McDonald, on her way light from Buffalo to Detroit, ran into the Fern. The Porter had all sails set and was going about four miles an hour. Capt. Herminger entered suit for \$252 damages, and Judge McDougall awards that amount. The evidence given at the trial was contradictory in a marked degree. The Porter's crew swore that there was no light on the Fern, while the latter's crew swore that the masthead light was burning brightly. They were corroborated by the keeper of the light-house, who saw the light burning.

CLEVELAND HARBOR WORK.

The contractors for placing the foundation for east breakwater extension at Cleveland harbor, are experiencing considerable trouble from the destruction of their location marks. Under their contract with the United States, they are required to drive a number of piles along the proposed line of extension, and to maintain a light from sunset to sunrise, upon the most easterly pile.

Many of these piles have been destroyed by vessels striking them, resulting in delays to the work, and expense to the contractors. The private range established for entrance to the Cuddy-Mullen and Northern Line wharves passes through the midst of these piles, but the range need not be followed further than 1000 feet from the wharves, as there is ample depth from that point to the eastward inside the piling.

A notice will be soon issued from Col. Smith's office,

Corps of Engineer, U. S. A., calling attention to this trouble, warning all persons against interference with the marks, and that the penalty imposed by United States statutes will be enforced.

Col. Smith also desires it known that through the 200 feet opening in the west breakwater, there are many rocks projecting to within 13 feet of the ordinary water surface and that the passage is not considered safe for vessels drawing more than 10 feet of water.

CEREMONIAL.

The Washington Times has the following story about the Duke of Wellington that illustrates the fantastic idea of honor held by many Spaniards, contrasted with the practical common sense of Englishmen. When the duke was co-operating with the Spanish army in the Peninsula against Napoleon, he was desirous on one occasion during a general engagement that the general commanding the Spanish contingent should execute a certain movement on the field. He communicated the wish to the Spaniard personally, and was somewhat taken aback to be told that the honor of the King of Spain and his army would compel him to refuse the request unless Wellington, as a foreign officer graciously permitted to exist and fight on Spanish soil, should present the petition on his knees. The old Duke often used to tell the story afterwards, and he would say: "Now, I was extremely anxious to have the movement executed, and I didn't care a 'twopenny damn' about getting on my knees, so down I pumped!"

THE WHEELER SHIPYARD.

Recently Capt. Davidson offered the bondholders 60 per cent. on the dollar for the Wheeler shipyard. At the time it was refused, but the bondholders are reported to have since changed their minds, and it is probable that they will make Capt. Davidson a counter proposition leading up to the deal. There is now only one boat on the stocks of the Wheeler yards, the steel schooner building for the Bessemer company. The steamer Samuel F. B. Morse, which was launched last Sunday, will leave the yard in about two weeks. West Bay City people are not worrying about the future of the yard, because they believe that there is too much money invested in it to have the bondholders let it stand idle for any length of time.

EASTERN FREIGHT REPORT.

Messrs. Funch, Edye & Co., New York, in their last freight report to the MARINE RECORD state as follows:

The list of fixtures for grain is the smallest presented in many months, and, all the more remarkable, in view of an assured wheat crop, larger than ever before harvested, whilst maize and the smaller description of grain promise to exceed the average. It appears that our farmers, after experiencing a prosperous year on last year's prices, are unwilling to face lower figures, and are withholding supplies in the hope that the eventual outturn of crops in Europe may again create an active demand for our cereals. So far, however, Europe appears unwilling to fall in with these anticipations, and the scarcity of supplies at the distributing centres has not alone militated against cargo shipments, but exercised a most depressing influence upon berth freights, which are wretchedly low and unprofitable. Owing to declining number of open boats, deal freights, though dull, have held their own, whilst vessels chartered for timber from the Gulf ports have had to face a slight decline. Some fixtures for cotton for September-October loading have been effected from the Atlantic ports at 36s. 3d., as against owners' asking rate of 37s. 6d. The continuation of the strike in the Welsh collieries has resulted in several fixtures of boats with coal from Virginia in various directions, as per particulars at foot.

Business in sail tonnage continues inactive, and transactions since our last report have been abnormally light, although rates are generally unchanged. The only item of interest we can refer to is a demand for coal tonnage from Virginian ports to South America and South Africa, caused by the strike in Wales. Several vessels have already been fixed, and more are likely to follow.

SHE WAS A CRACKER JACK.

"I remember when I was captain of a schooner that carried about 15,000 bushels of wheat," remarked an old-time lake man, in conversation with a Toledo Blade reporter, "people looked at her as if she were so big that the limit had been reached in vessel capacity. Away back in those days, a two thousand bushel vessel was a good one, but

when the one I sailed came out, she was simply a cracker-jack. But it was not long until vessels carrying 20,000 bushels came out and they kept building bigger craft until the David Dows, with her five masts, was built, and took out of this harbor over 80,000 bushels of wheat. Then the limit of carrying had surely been reached, in the opinion of many well-informed lake men. But the bigger craft were turned out, and when a craft carrying out 100,000 bushels of wheat came into port, she created no surprise. I remember when the steamer John C. Gault arrived here on her first trip for the Wabash Lake line. She attracted a great deal attention. People from all parts of the city went to see her, and the newspapers had long articles about her, as she was a monster for those days. But to-day, the Gault ranks among the craft of ordinary carrying capacity. The schooners that used to carry 300 tons of coal were called big ones. Now there are numbers of craft that carry 6,000 to 7,000 tons. Last fall a vessel took out of this port 184,000 bushels of wheat."

CONJUGAL FELICITY.

It is a good thing sometimes to push along something from the back ages as the following notice from the RECORD a dozen years ago would show:

Married, on Monday July 17, 1882, Levi Eaton, engineer of the tug Stevens and Miss Minnie Traufler.

Joy be with you ever, Levi. In this voyage of life let your gentle partner control you as you manage your engine. When storms arise and angry waves confront you, her love and devotion will give you courage. On this long trip, may your vessel never be stranded, swamped nor wrecked. When driving with the wind let your wife's sweet influence restrain you, and when stemming a stiff current thank God for her help. Keep your engine under control and don't carry more steam than the law allows. Keep your hand on your throttle, Levi, and always get in on time. The hearty wishes of all your friends is that you may never blow out your cylinder head nor burst your boiler. When the small craft begin to ply about your starboard quarter, deal gently with them, and don't run them down.

GOLD FROM SEA WATER.

In view of the contemporary interest in the various methods for obtaining gold from sea water, the most recent analyses made by Don, of New Zealand, are referred to in a recent issue of the Engineering and Mining Journal. He treated six samples of sea water by different methods, and found quantities of gold varying from .061 grain to 0.78 grain, the average of the six determinants being .071 grain per ton of sea water. The value of the fine gold would be three-tenths of one cent per ton of water. The analyses are considered most trustworthy, and, according to the Journal, render absurd the claims of those who pretend to be treating sea water for its contents in gold with commercial results.

VISIBLE SUPPLY OF GRAIN

As compiled for The Marine Record, by George F. Stone, Secretary Chicago Board of Trade.

CITIES WHERE STORED.	WHEAT. Bushels.	CORN. Bushels.	OATS. Bushels.	RYE. Bushels.	BARLEY Bushels.
Buffalo	484,000	424,000	267,000	11,000	103,000
Chicago	485,000	6,150,000	485,000	122,000	.....
Detroit	43,000	61,000	5,000	16,000	.....
Duluth and Superior	553,000	1,642,000	28,000	14,000	30,000
Milwaukee	25,000	.....	.....	2,000	9,000
Montreal	30,000	55,000	608,000	8,000	21,000
Oswego	.....	.....	.....	.....	.....
Toledo	142,000	246,000	101,000	46,000	.....
Toronto	14,000	.....	10,000	.....	.....
On Canal	33,000	1,462,000	46,000	9,000	.....
Grand Total	6,897,000	16,017,000	3,081,000	449,000	243,000
Corresponding Date, 1897	17,226,000	18,501,000	6,580,000	1,536,000	862,000
Increase	.....	.....	.....	12,000	.....
Decrease	1,357,000	1,903,000	271,000	.....	55,000

While the stock of grain at lake ports only is here given, the total shows the figures for the entire country except the Pacific Slope.

FOR SALE.

Steamer Geo. W. Morley. The above wreck burned off Evanston, Lake Michigan, including boiler, engine, etc., will be sold to the highest bidder on Sept. 1st, 1898. Address C. A. MACDONALD & CO., Chicago.

33

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**CAPITAL, Paid up in Cash, - - - - - \$3,000,000.00
ASSETS, - - - - - 10,023,220.93**

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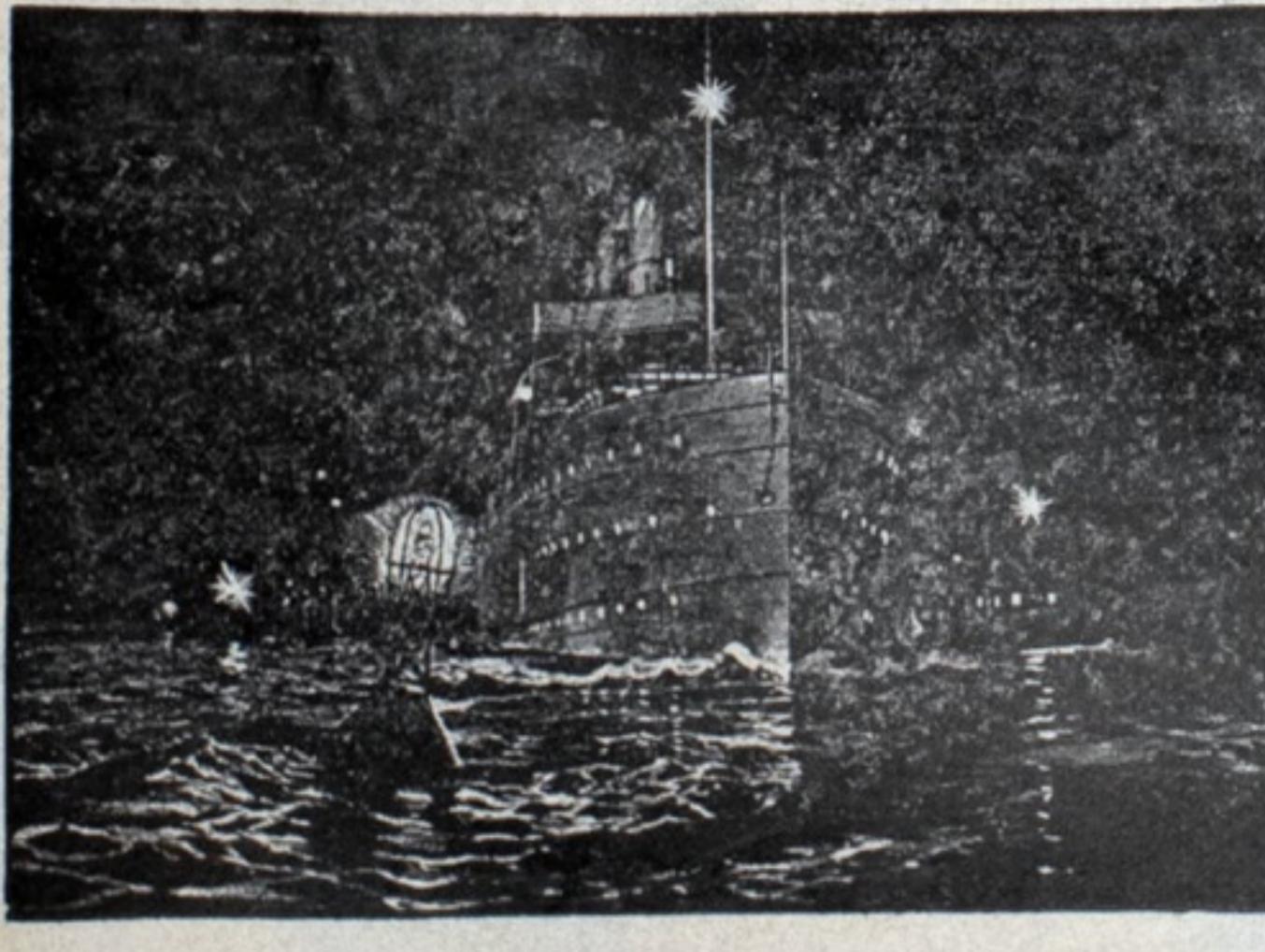
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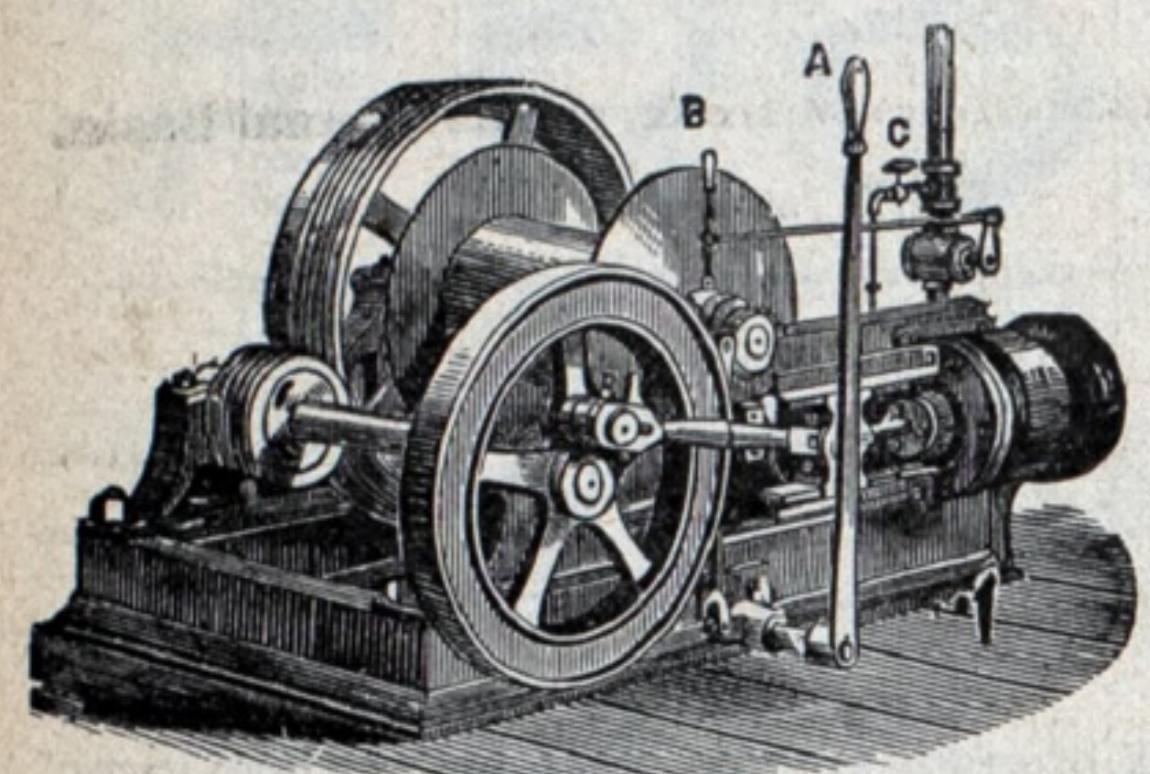
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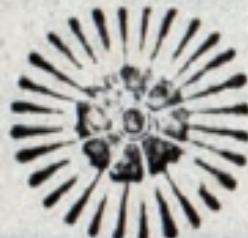


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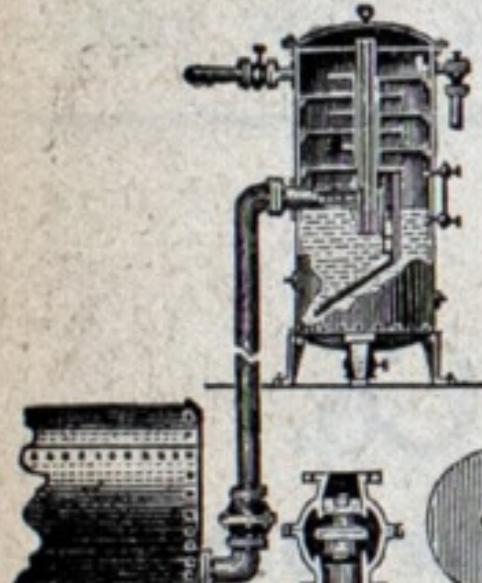
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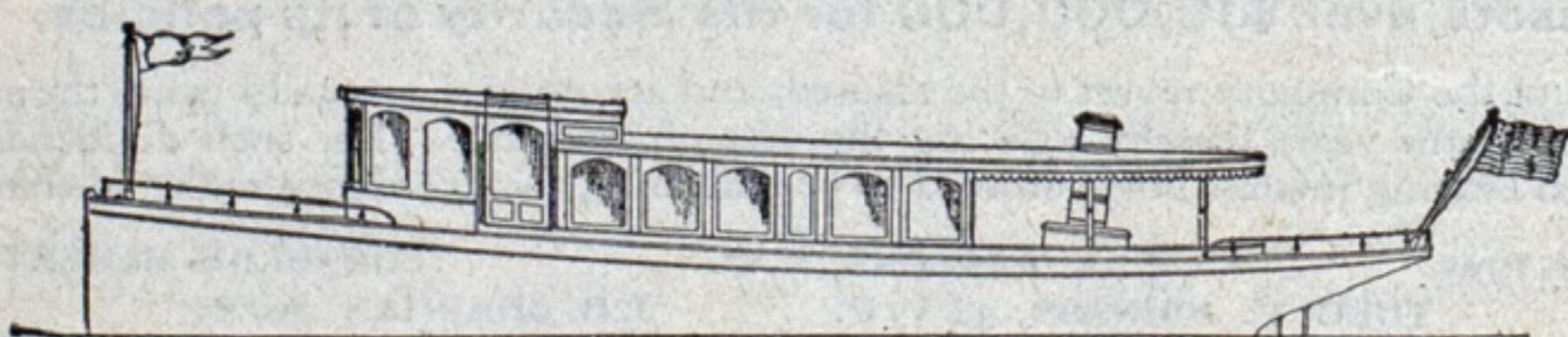
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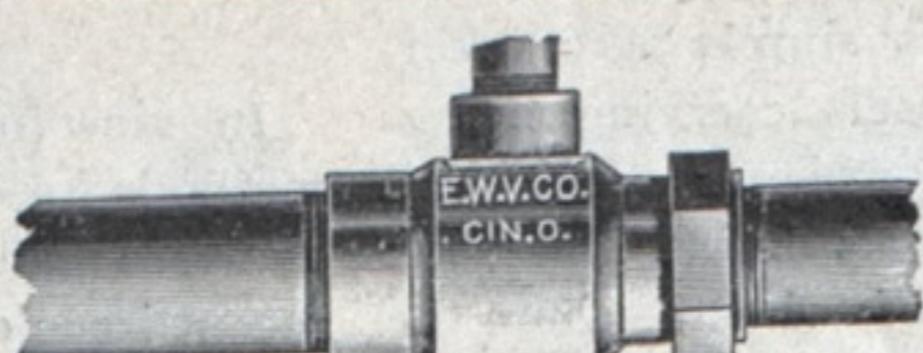
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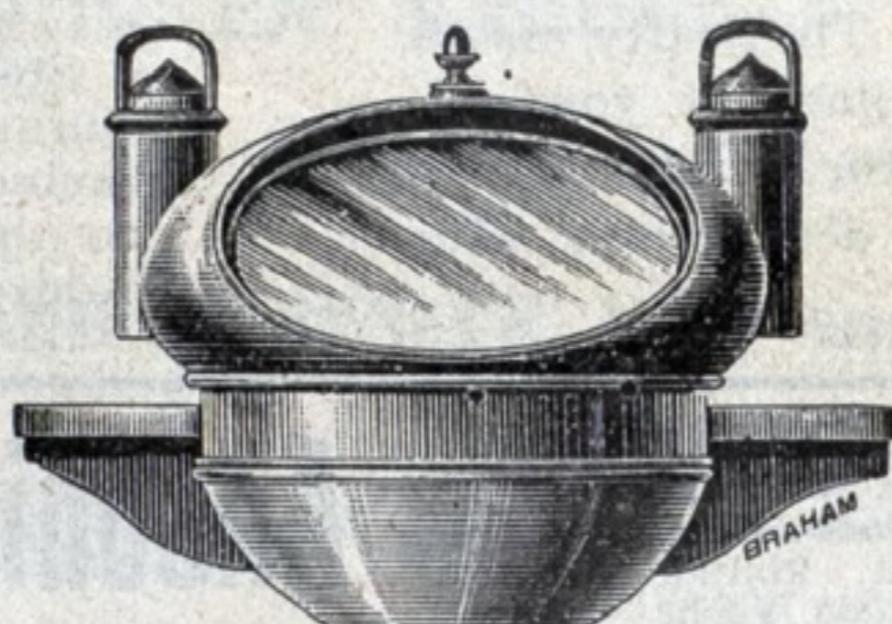
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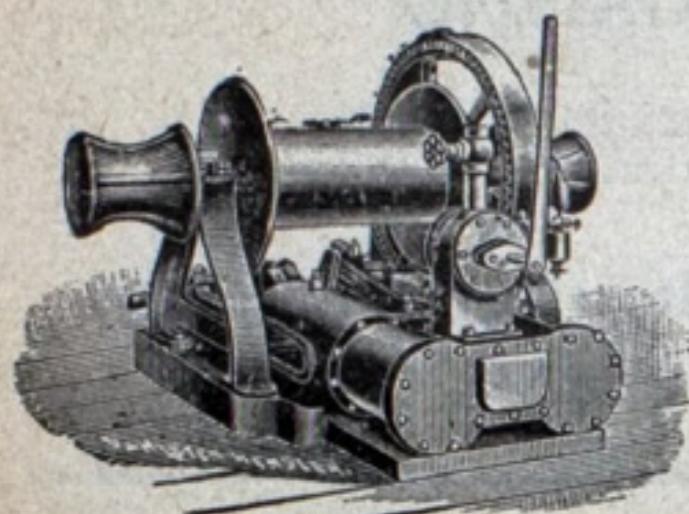
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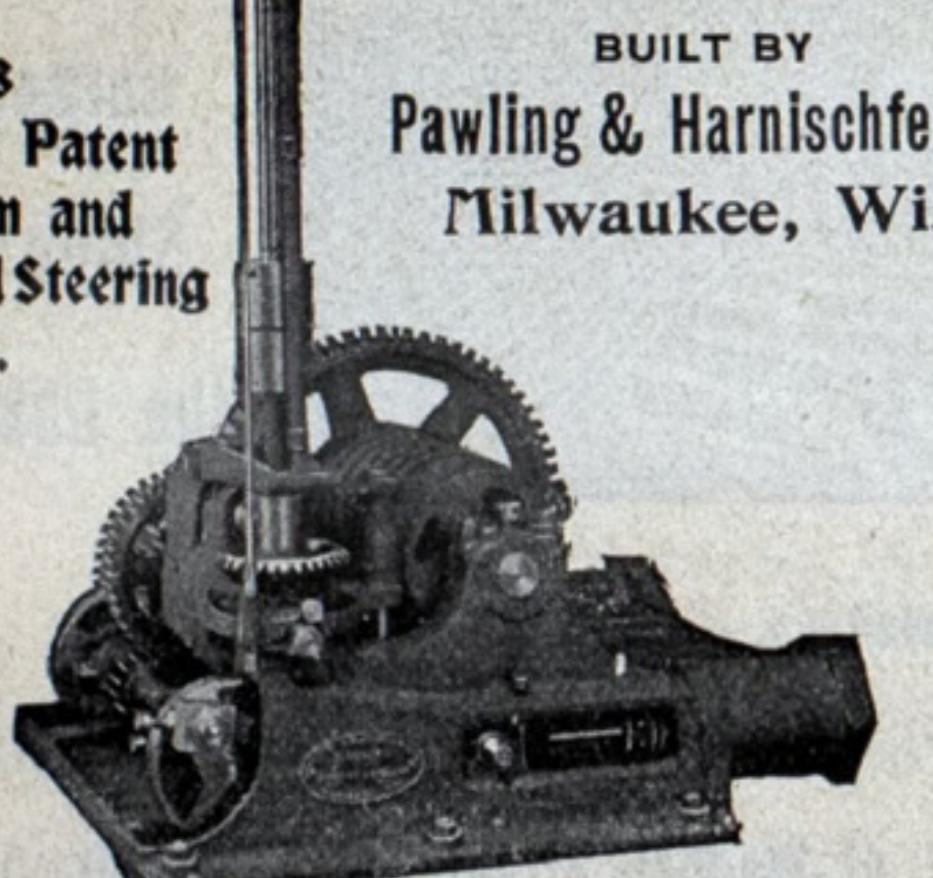
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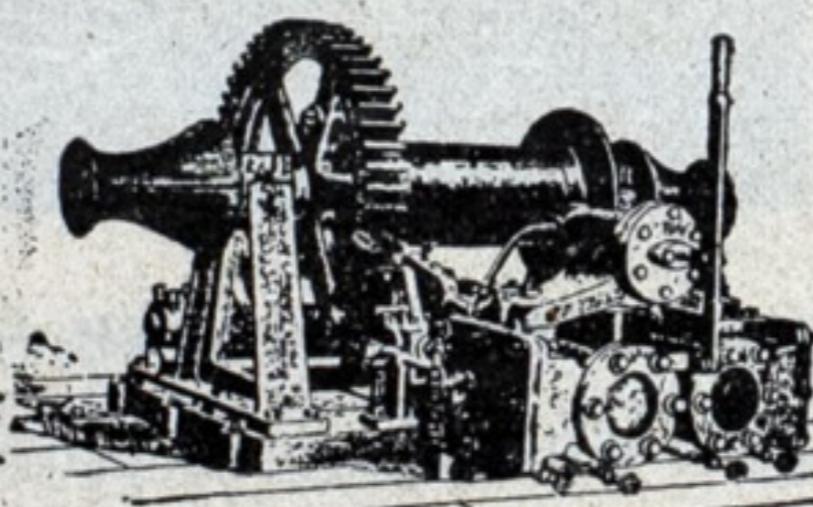
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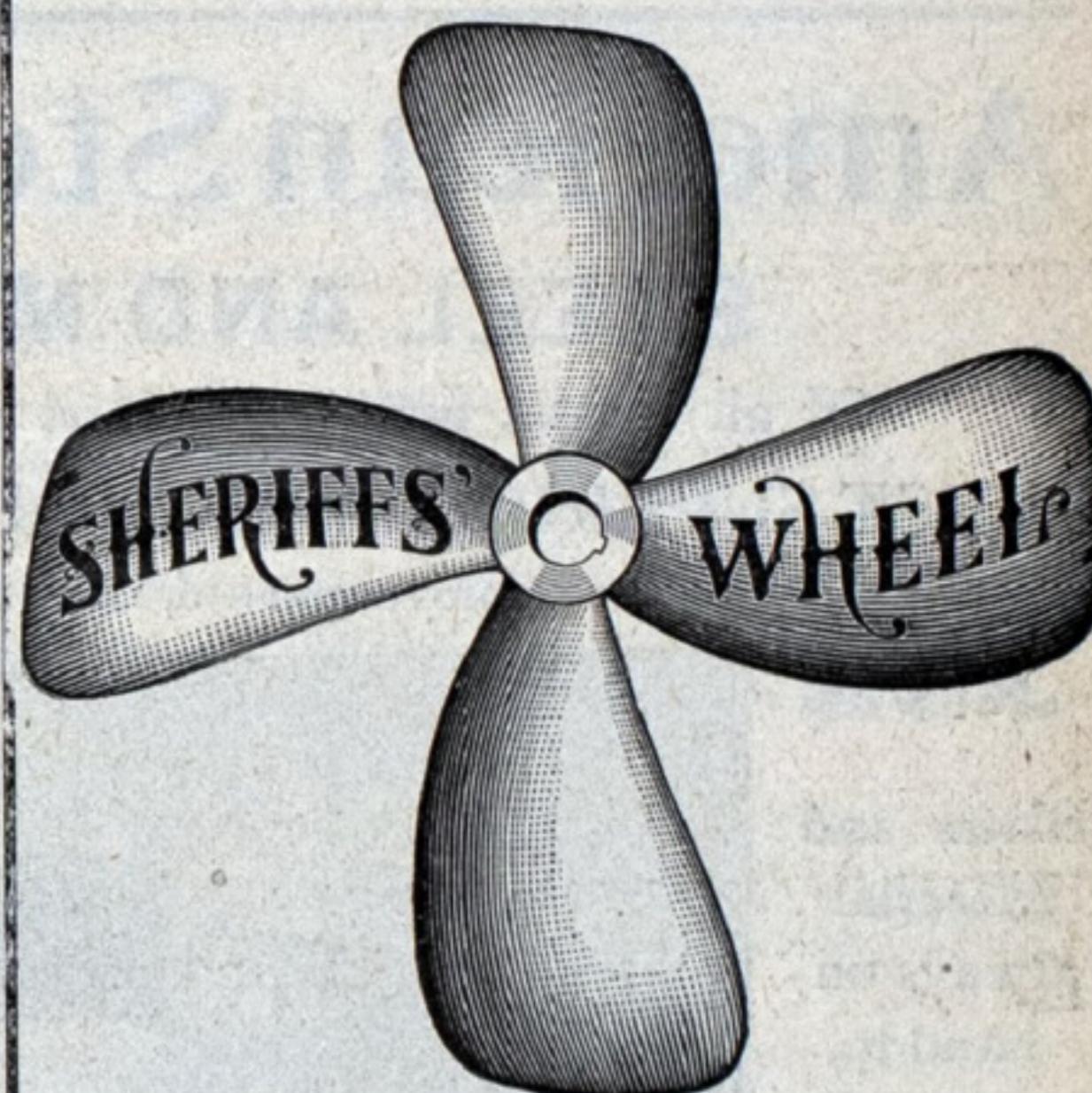
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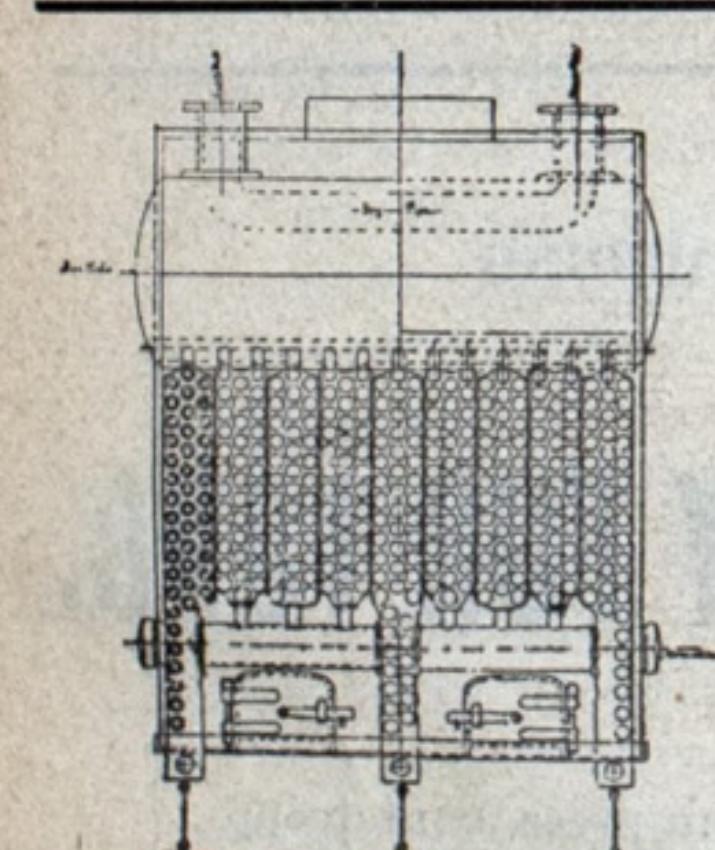
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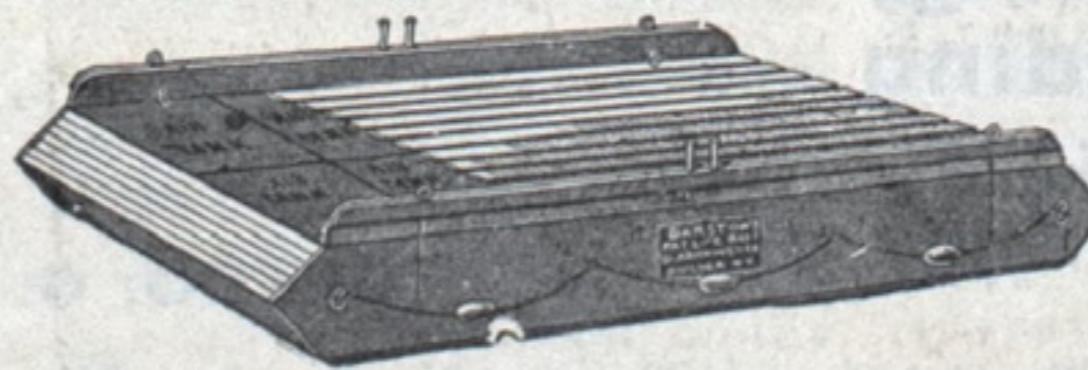
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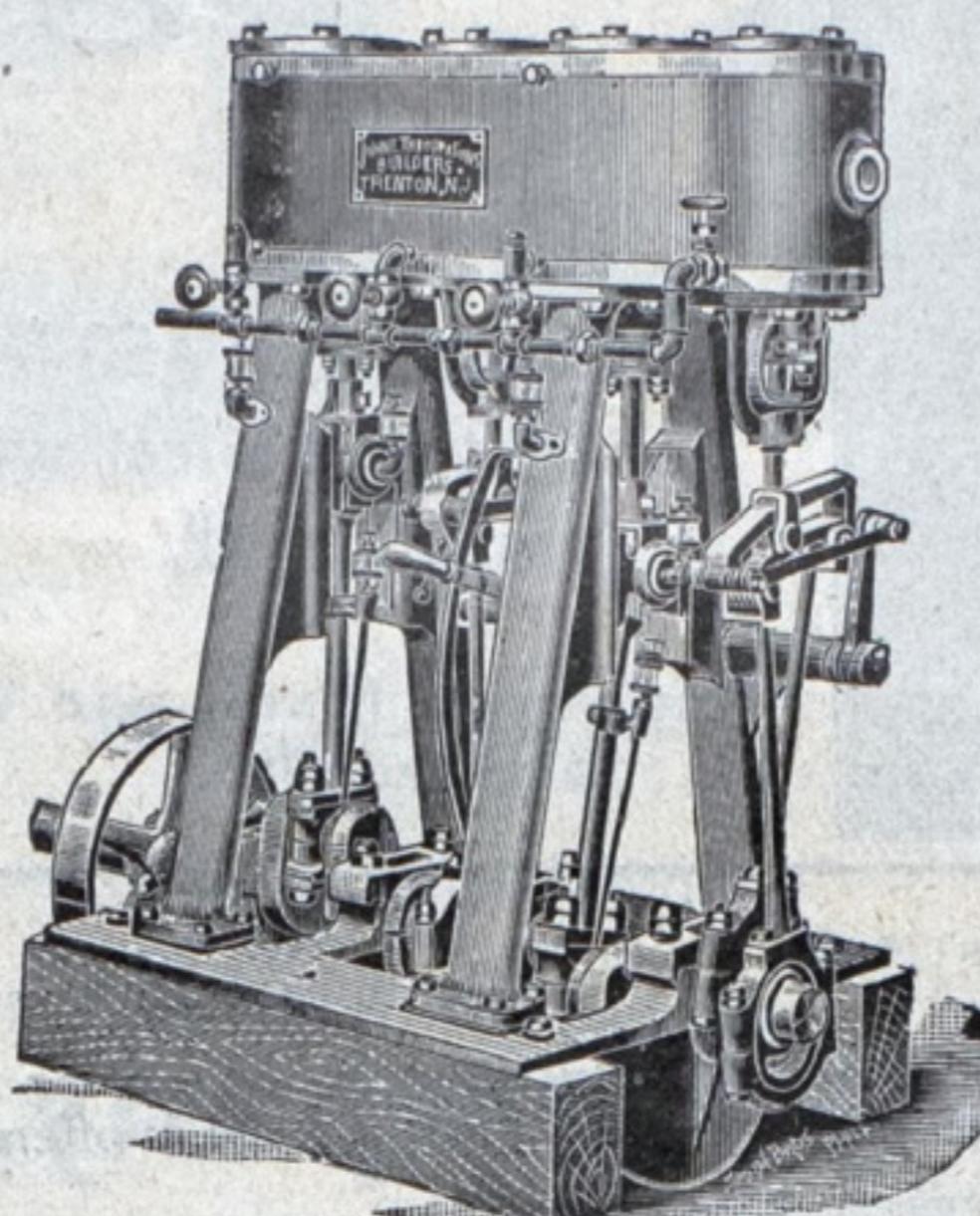
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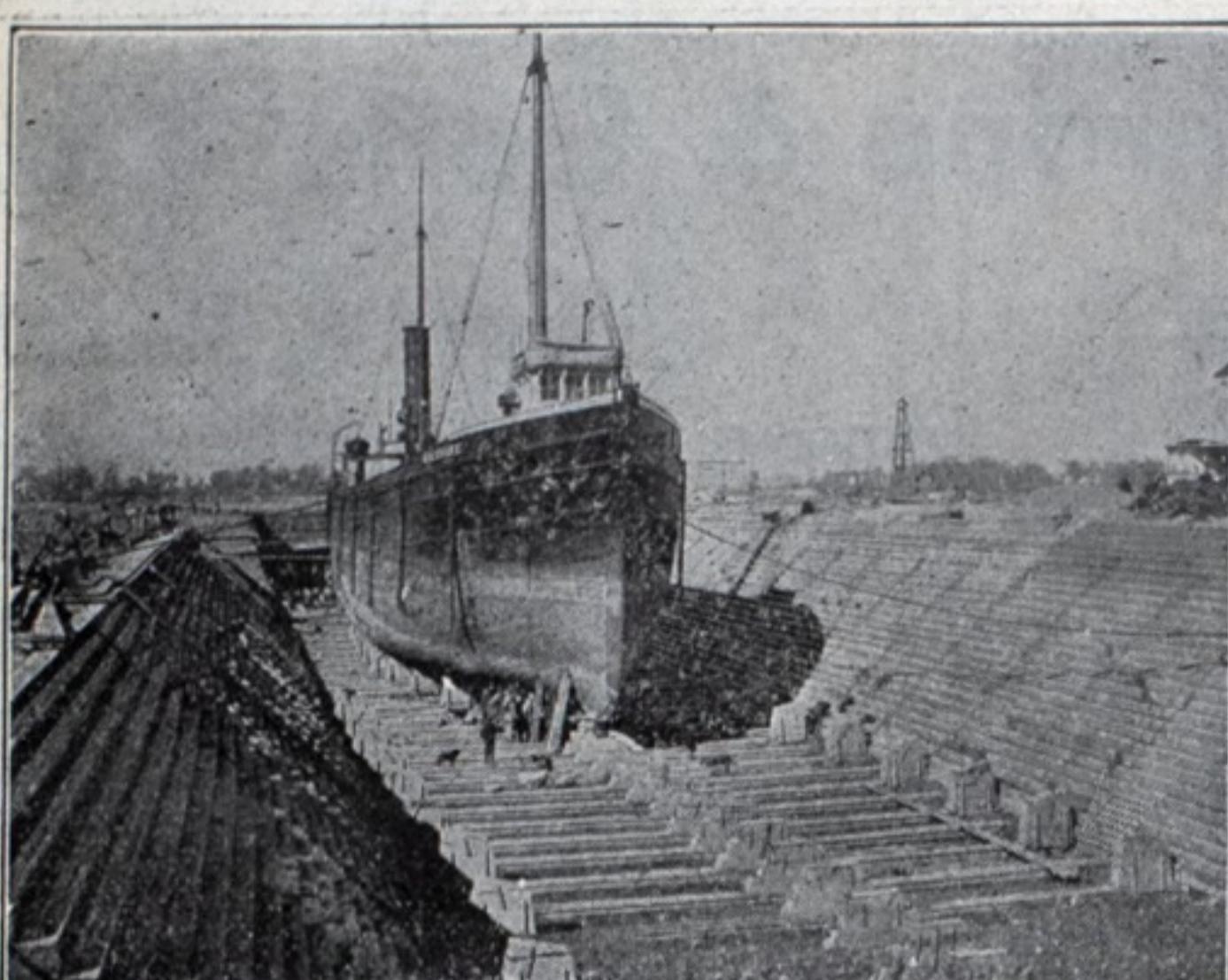
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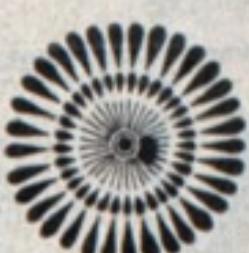
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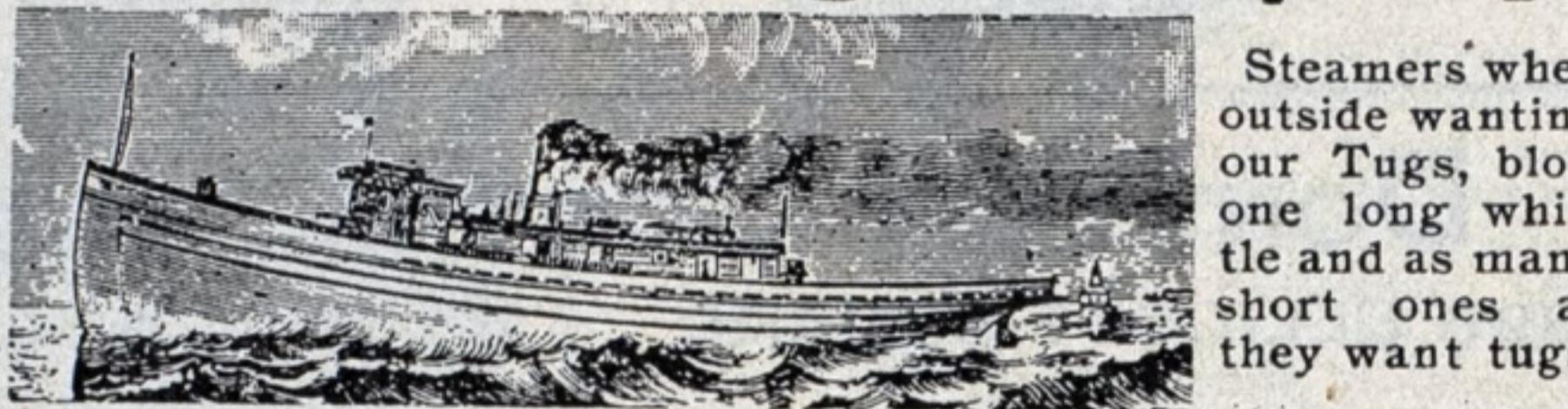
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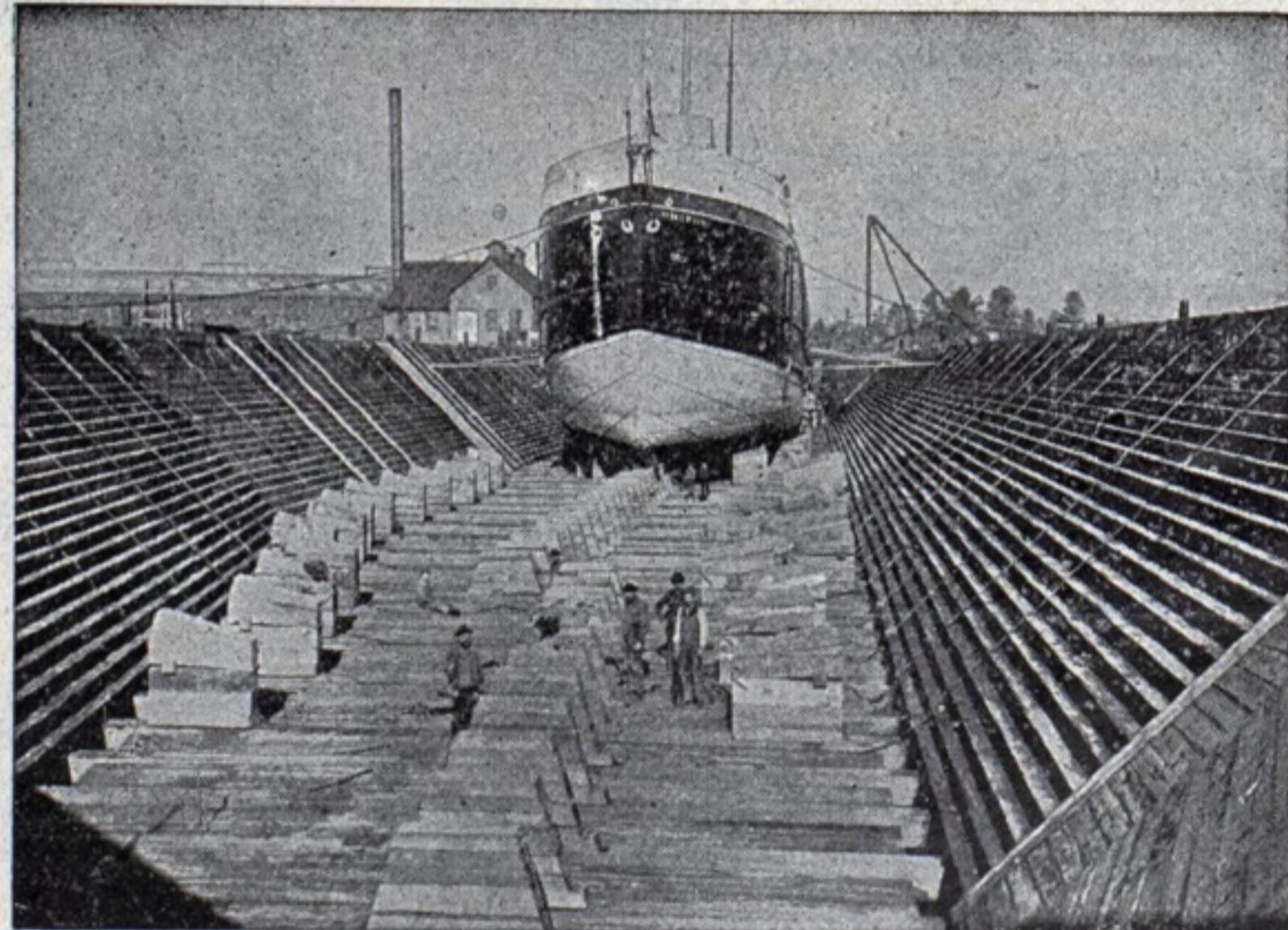
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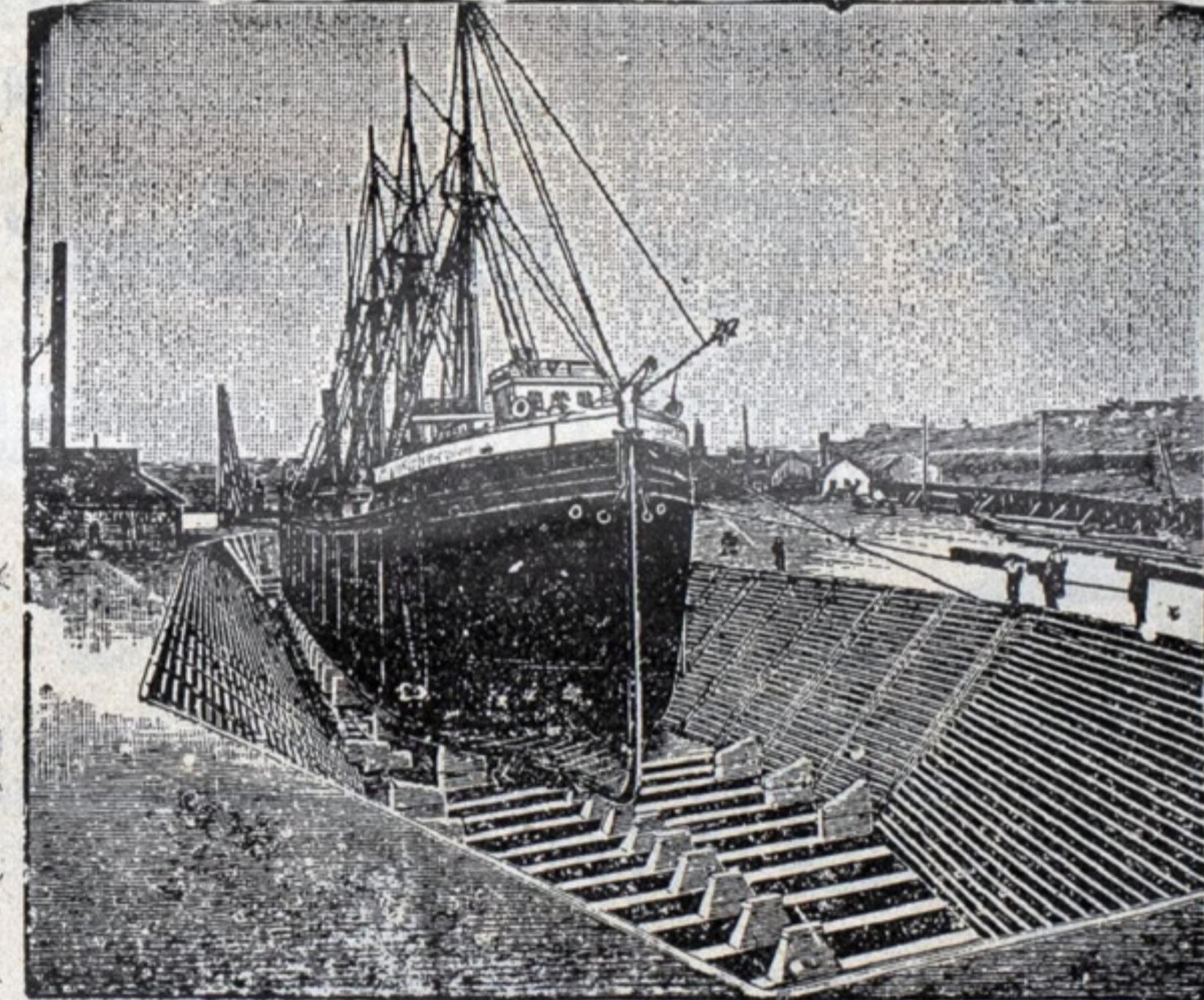
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